

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
IT Administration (continued)	AIT
Discipline	
AIT070 IS Security	
<ul style="list-style-type: none"> • Evaluates, tests, recommends, develops, coordinates, monitors, and maintains information security policies, procedures and systems, including access management for hardware, firmware and software • Ensures that IS security architecture/designs, plans, controls, processes, standards, policies and procedures are aligned with IS standards and overall IS security • Identifies security risks and exposures, determines the causes of security violations and suggests procedures to halt future incidents • Investigates and resolves security incidents and recommends enhancements to improve security • Develops techniques and procedures for conducting IS security risk assessments and compliance audits, the evaluation and testing of hardware, firmware and software for possible impact on system security, and the investigation and resolution of security incidents 	
AIT080 IT Training/Documentation	
<ul style="list-style-type: none"> • Develops, coordinates and conducts IT training, educational and orientation programs for users • Develops and maintains documentation of information technology systems and applications and coordinates incorporation of documentation within applications (e.g., online help) • Develops, implements and/or approves training and documentation policies, standards and procedures • Maintains records and prepares documentation of training programs, scheduling, employee attendance, and training program effectiveness 	
AIT090 Voice Communications	
<ul style="list-style-type: none"> • Performs technical analysis of software, hardware and transmission systems for voice communications • Ensures that remote hardware and communication facilities have procedures for installation and support of voice communications systems • Collaborates with internal and external customers and vendors to determine voice communications system requirements 	
AIT100 IT Asset Management	
<ul style="list-style-type: none"> • Establishes and implements hardware and software acquisition, protection, maintenance and retention policies, standards and procedures that are aligned with IT standards and strategy • Investigates available hardware and software products, evaluates and recommends products based on user requirements • Coordinates with the procurement function to interview, select and negotiate with hardware and software vendors in order to purchase the appropriate equipment at the lowest cost • Reviews licenses and/or contracts to ensure that hardware and software equipment is covered by the contract and properly documented 	
AIT110 IT Outsourcing Management	
<ul style="list-style-type: none"> • Outsources IT activities in order to lower information technology costs and enable the organization to focus on its core business operations • Develops and implements outsourcing policies, standards and procedures that are aligned with the organization's IT standards and strategy • Develops and administers contracts with outsourcing services (e.g., data center operations, help desk) in coordination with the organization's procurement and legal functions • Analyzes and reports on outsourcing vendor performance • Manages the organization's relationship with outsourcing vendors and ensures that the outsourcing vendor's performance meets the organization's requirements 	

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Functions and Disciplines Definitions (continued)

<u>Function</u>		<u>Code</u>
IT Administration (continued)		AIT
Discipline		
AIT560	Critical Infrastructure Protection (CIP) Compliance Audit <ul style="list-style-type: none">• Develops and implements programs to evaluate adherence to North American Electric Reliability Corporation (NERC) CIP compliance efforts to improve physical and cyber-security for the electric power system as it relates to reliability• Ensures that identified critical cyber asset systems comply with CIP standards and internal policies to prevent incidents that may compromise or degrade the infrastructure• Utilizes appropriate CIP tools and procedures for infrastructure analysis, assessment, remediation, indications, warnings, mitigation, response, and reconstitution activities that occur before, during, and after events which may result in infrastructure compromise or disruption	
AIT999	IT Administration - No Applicable Discipline <ul style="list-style-type: none">• Responsibilities are within the IT Administration Function but are not described in other Discipline summaries	

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Functions and Disciplines Definitions (continued)

Function	Code
Legal	ALG
Provides legal advice and services on issues concerning the rights, obligations and privileges of the organization. Represents the organization to customers, suppliers, competitors and government agencies. Provides resolution of business or technical issues by identifying legal solutions and recommending a course of action. Examines legal data to determine advisability of defending or prosecuting lawsuits.	
Applicable Career Bands	
Discipline	
ALG000	Legal Generalist/Multidiscipline <ul style="list-style-type: none"> Provides a full range of legal advice and services Responsibilities are within the Legal Function as a generalist or in a combination of Disciplines
ALG010	Contract Law <ul style="list-style-type: none"> Reviews, drafts and negotiates a broad range of commercial contracts Ensures that contracts are in compliance with legal, regulatory and organization policies Monitors the contract process to assure compliance with the organization's contractual guidelines, satisfaction of customer specifications, and adherence to organization policy May act as contract liaison between the organization and customers/vendors, including participation in precontract discussions, contract negotiations and contract changes Assesses commercial risk of contracts
ALG020	Employment Law <ul style="list-style-type: none"> Provides legal advice regarding employment law Collaborates with Human Resources on all issues of the law related to the organization's human capital Monitors legal issues and implications concerned with discrimination, sexual harassment, health and safety, hiring and firing, as well as all other aspects of employee rights and responsibilities
ALG030	Intellectual Property/Patent Law <ul style="list-style-type: none"> Advises and represents the organization on legal issues concerning patent, copyright or trademark matters Provides legal advice on the patentability of inventions, infringement of patents or copyrights, and the validity of trademarks Prepares applications for patents, copyrights and trademarks
ALG040	Litigation <ul style="list-style-type: none"> Examines legal data to determine advisability of defending or prosecuting a lawsuit Studies statutes, decisions and ordinances to determine appropriate plan of action Prepares files and takes cases to trial if out-of-court settlements cannot be reached Assesses impact of case outcomes and initiates steps to implement any resulting changes
ALG050	Merger and Acquisition Law <ul style="list-style-type: none"> Provides legal advice to the organization on mergers and acquisitions Participates in negotiations on behalf of the organization regarding mergers, acquisitions and divestitures Works closely with Strategic Planning/Corporate Development

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Functions and Disciplines Definitions (continued)

Function		Code
Legal (continued)		ALG
Discipline		
ALG060	Real Estate Law <ul style="list-style-type: none">• Advises and represents the organization on real estate transactions (e.g., real estate purchases and sales, leasing, real estate taxes, zoning)• Reviews and approves contractual agreements	
ALG065	Corporate Governance <ul style="list-style-type: none">• Creates efficient monitoring systems and incentives to ensure that executive behavior is aligned with the interests of stakeholders• Plans and monitors relationships among stakeholders, Board of Directors, executive officers, independent auditors and the Board Audit Committee, to ensure compliance with rules and policies of the organization• Identifies and resolves issues and recommends preventive and corrective measures	
ALG070	Regulatory Compliance Law <ul style="list-style-type: none">• Interprets laws and government regulations affecting the operation of the organization• Implements policies and procedures to ensure organization compliance with regulations and regulatory reporting requirements• Investigates and resolves compliance problems and responds to questions from internal sources and regulatory agencies	
ALG080	Tax Law <ul style="list-style-type: none">• Provides legal advice and represents the organization with relevant taxation agencies• Monitors potential impact of tax legislation and formulates tax savings plans to alleviate or reduce an increased tax burden• Prepares opinions on tax liability resulting from past or future operations	
ALG999	Legal - No Applicable Discipline <ul style="list-style-type: none">• Responsibilities are within the Legal Function but are not described in other Discipline summaries	

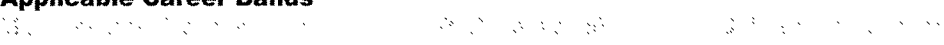
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Functions and Disciplines Definitions (continued)

Function	Code
Legal Support	ALS
Provides support for a variety of law-related activities that do not require a law degree, including legal or factual research, contract administration, document preparation and analysis, citation checking, and trial preparation.	
Applicable Career Bands	
100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 660, 670, 680, 690, 700, 710, 720, 730, 740, 750, 760, 770, 780, 790, 800, 810, 820, 830, 840, 850, 860, 870, 880, 890, 900, 910, 920, 930, 940, 950, 960, 970, 980, 990	
Discipline	
ALS000	Legal Support Generalist/Multidiscipline <ul style="list-style-type: none"> Provides support for a variety of law-related activities that do not require a law degree, including legal or factual research, contract administration, document preparation and analysis, citation checking, and trial preparation Responsibilities are within the Legal Support Function as a generalist or in a combination of Disciplines
ALS010	Paralegal <ul style="list-style-type: none"> Performs a variety of law-related tasks under the direction of the organization's attorneys Conducts legal research, drafts legal documents and performs other related duties Has or is working towards a paralegal designation
ALS020	Contract Administration <ul style="list-style-type: none"> Participates in the development and fulfillment of contract requirements in the purchase or sale/delivery of equipment, materials, products or services Evaluates contract compliance and advises others on contractual rights and obligations Requests or approves amendments to contract terms or contract extensions Prepares bids or requests for proposals (RFPs) including specifications and requirements; negotiates contract terms and participates in the determination of acceptable bids
ALS030	Claims Resolution <ul style="list-style-type: none"> Manages claims operations that involve customer contact, investigation, and settlement of property and personal damage claims for and against the organization Approves all claim settlements both for and against the organization Works with insurance companies, contractors, repair facilities, internal and external legal staff, law enforcement agencies, and collection services in the settlement of claims Coordinates and conducts site investigations to determine the causes of damage and the extent and method of restitution to customer Initiates procedures for billing and collection of money owed to the organization for damage to organization equipment and/or property
ALS040	Legal Secretarial/Administrative Assistance <ul style="list-style-type: none"> Performs secretarial duties that require knowledge of legal procedures and terminology Prepares papers and correspondence such as contracts, briefs, summonses, complaints and motions May maintain files and calendars, schedule appointments, schedule meetings, and make travel arrangements
ALS999	Legal Support - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Legal Support Function, but are not described in other Discipline summaries

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Functions and Disciplines Definitions (continued)

Function	Code
Marketing	AMK
Markets the organization's products, brands and/or services. Designs, develops and implements communication programs to advertise the organization's products/brands/services using media (e.g., print, broadcast, digital), events, and sales promotions. Develops and evaluates pricing strategies and structures. Designs and maintains websites to promote and sell the organization's products through the Internet.	
Applicable Career Bands	
	
Discipline	
AMK000	Marketing Generalist/Multidiscipline <ul style="list-style-type: none"> • Designs, develops and implements marketing programs and/or pricing strategies to support the organization's products, services or market sector • Uses specific marketing strategies and media (e.g., print, broadcast, digital) to launch and position products and services in a sector • Identifies and implements marketing strategies and programs in collaboration with sales and technical teams • Responsibilities are within the Marketing Function as a generalist or in a combination of Disciplines
AMK020	Marketing Communications <ul style="list-style-type: none"> • Coordinates the development of marketing communications materials by creative design and creative writing services to effectively represent the products, services, brands and/or the organization to customers and prospects • Applies various communication strategies to create an impression, raise awareness, and encourage a preference and response by the target audience for the organization and its products, services, and brands • Develops and coordinates multimedia packages (e.g., letters, brochures, video, point-of-purchase displays) • May involve use of sponsorship, events and sales promotions
AMK025	Advertising <ul style="list-style-type: none"> • Promotes the sale of the organization's products, services, brands and/or the organization through various advertising media (e.g., print, broadcast, digital) and other methods • Oversees creation and placement of advertisements using various media, and coordinates efforts with advertising agencies • Designs, develops, and implements advertising/promotion policies and monitors results • Coordinates with internal clients (e.g., product/brand managers, business unit managers) to source and produce advertising materials
AMK028	Marketing - Sponsorship <ul style="list-style-type: none"> • Researches, analyzes and recommends sponsorships (e.g., nonprofit organizations, sports teams, events, media programs) to management as part of a high-profile, long-term relationship between the organizations • Promotes sponsorship advantages to management that may include providing multiple advertising and/or promotional vehicles (e.g., print, face-to-face, word of mouth, outdoor, online) for targeted communication to the organization's customers
AMK030	Market/Segment Development <ul style="list-style-type: none"> • Identifies new business opportunities and creates appropriate business plans • Identifies new market opportunities (i.e., products/services, technologies, markets) • Monitors organization's market share and competition
AMK040	Market Research/Intelligence <ul style="list-style-type: none"> • Performs analyses and prepares forecasts and recommendations in the areas of product preferences, sales coverage, market penetration, market practices and sales trends • Researches market conditions to determine potential sales of a product

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Marketing (continued)	AMK
Discipline	
<div data-bbox="191 543 309 582">AMK060</div> <div data-bbox="411 543 621 582">Direct Marketing</div> <ul style="list-style-type: none"> Markets the organization's products and services using customer marketing databases Creates direct mail marketing plans, targeting specific market segments with specialized offers Collaborates with market research in developing response models and other database improvements May conduct data mining analyses of customer data to develop marketing trends 	
<div data-bbox="191 692 309 730">AMK070</div> <div data-bbox="411 692 621 730">Brand Marketing</div> <ul style="list-style-type: none"> Promotes and maintains the brand image at local, national or international levels Coordinates the marketing strategies including packaging, pricing, expense budgets, advertising and promotion of the brand Develops associated advertising campaigns for the brand 	
<div data-bbox="191 840 309 879">AMK080</div> <div data-bbox="411 840 508 879">Pricing</div> <ul style="list-style-type: none"> Develops pricing strategies to meet customers' needs while providing a profit for the organization Determines core business costs of service in support of pricing/tariff development Designs, implements and maintains pricing infrastructures Evaluates effectiveness of pricing strategies and modifies pricing structures as needed Provides reporting and documentation of pricing structures and serves as the point-of-contact for pricing inquiries from internal sales department, but not customers 	
<div data-bbox="191 1043 309 1082">AMK090</div> <div data-bbox="411 1043 821 1082">Marketing Program Management</div> <ul style="list-style-type: none"> Designs, develops and coordinates marketing programs for various service offerings Develops marketing plans for program implementation, monitoring and evaluation 	
<div data-bbox="191 1144 309 1183">AMK110</div> <div data-bbox="411 1144 707 1183">E-Commerce Marketing</div> <ul style="list-style-type: none"> Develops marketing, merchandising, and creative strategies to promote and sell the organization's products and services through the Internet or other digital channels Establishes, maintains and updates the "web experience" from the viewpoint of the customer Develops affiliated programs designed to increase exposure to and business from the target audience Establishes and manages the relationships with search engines and portal sites that are strategically aligned with the e-commerce goals Manages the implementation of e-commerce marketing programs and analyzes their effectiveness May be responsible for social media marketing 	
<div data-bbox="191 1403 309 1442">AMK111</div> <div data-bbox="411 1403 770 1442">Internet Search Optimization</div> <ul style="list-style-type: none"> Analyzes the results of the leading search engines to understand what keywords influence results rankings in order to optimize traffic to the organization's online/digital sites Develops visible content and hidden tags in online/digital sites to improve the volume and/or quality of traffic to a site from search engines from unpaid search results by analyzing traffic and search results Ensures that online content is labeled in the way that best serves users' needs in finding content and exploring the website Advises and trains content management staff on best practices for labeling content 	
<div data-bbox="191 1634 309 1673">AMK112</div> <div data-bbox="411 1634 707 1673">Social Media Marketing</div> <ul style="list-style-type: none"> Plans and implements marketing strategies and campaigns through social media optimization (SMO) Builds brand identification through penetration of online social media Solicits, creates and posts content that attracts attention and encourages readers to share it with their social networks Establishes and maintains relationships with social network members, bloggers and the online community Participates in building websites that include integration points to various social networking and micro blogging sites and tools 	

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Marketing (continued)	AMK
Discipline	
AMK113	Online Community Management <ul style="list-style-type: none"> Builds, grows and manages internal and/or external online community relationships across a variety of platforms (e.g., social media, blogs, message boards, email groups) to generate brand awareness, encourage loyalty to the organization, and increase engagement of target audiences Generates and posts social media content and sponsors online community events (e.g., webinars, group discussions) Monitors and engages community targets in online conversations, fields questions and offers solutions Monitors, evaluates and reports on online community trends
AMK114	Website Traffic Analysis <ul style="list-style-type: none"> Tracks usage trends of the organization's websites, including number and quality of visitors and advertising campaign impact Performs analyses and prepares regular, periodic forecasts and recommendations in the areas of site usage and user behavior Makes recommendations to improve website effectiveness by analyzing click stream data to maximize appeal to advertisers Oversees web analytics software selection and vendor relationships May conduct analyses to measure social media audiences as they relate to web advertising
AMK120	Web Content Management/Production <ul style="list-style-type: none"> Ensures that the organization's websites provide up-to-date and comprehensive product/service information that is easily available to existing and potential customers Establishes and maintains an information architecture that is well organized, user friendly, and presents a consistent corporate look and feel Coordinates the development, integration, format design and release of content from writers and designers Analyzes the use of website content and design; takes steps as necessary and affordable to improve information content architecture and design Employs focus groups, surveys, web statistics, e-mail, etc., to elicit feedback and improve website content and organization
AMK130	Web Graphic/Visual Design <ul style="list-style-type: none"> Develops and maintains website graphic designs (e.g., art, color themes, photographs, web pages) and layout to support the organization's image, identity and brands Reviews all elements of site design from a human factors (i.e., ergonomics of human/computer interaction) perspective to ensure maximum usability and to ensure alignment with the organization's overall objectives Establishes and maintains the organization's website graphics standards, techniques and methods Analyzes website technology trends to identify new techniques and ensure optimal site design
AMK140	Web Multimedia Production <ul style="list-style-type: none"> Designs a diverse mix of web material, graphical user interfaces, and multimedia delivered for the web Coordinates the work of designers, programmers, writers and other creative specialists to create visually rich, compelling, and effective web content that draws together interactive multimedia features, such as text, sound, graphics, digital/analog photographs, 2D/3D modeling, animation, video and information Digitizes and digitally edits source multimedia elements (e.g., sound, video, animation) using various authoring platforms Requires familiarity with streaming media concepts and techniques, including digital video and audio compression standards such as MP3, WAV, and MPEG
AMK150	Web Creative Writing <ul style="list-style-type: none"> Develops creative, clear written material for the organization's websites in support of the organization's marketing programs in accordance with the established editorial and style guidelines Plans, develops and publishes online marketing communications for websites such as descriptions of the organization's products and services, frequently asked questions (FAQs), and electronic brochures
AMK999	Marketing - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Marketing Function but not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Customer Support/Operations	AMS
Provides new and existing customers with the best possible service in relation to billing inquiries, service requests, suggestions and complaints. Includes Call Center - Outbound, Call Center/Customer Service and e-Commerce Customer Service.	
Applicable Career Bands	
Discipline	
AMS000	Customer Support/Operations Generalist/Multidiscipline <ul style="list-style-type: none"> Provides new and existing customers with the best possible service in relation to billing inquiries, service requests, suggestions and complaints Resolves customer inquiries and complaints fairly and effectively Provides product and service information to customers, and identifies upselling opportunities to maintain and increase income streams from customer relationships Recommends and implements programs to support customer needs Responsibilities are within the Customer Support/Operations Function as a generalist or in a combination of Disciplines
AMS010	Customer Service <ul style="list-style-type: none"> Provides customer services relating to sales, sales promotions, installations and communications Ensures that good customer relations are maintained, and customer claims and complaints are resolved fairly and effectively, and in accordance with the consumer laws Develops organizationwide initiatives to proactively inform and educate customers Develops improvement plans in response to customer surveys
AMS020	Customer Contact Center Generalist/Multidiscipline <ul style="list-style-type: none"> Provides timely responses to customer inquiries by telephone and/or e-mail in an in- or outbound service center, consistent with service and quality standards Processes customer orders, bills and accounts, and applications for service, maintenance and termination Troubleshoots and resolves customer complaints
AMS022	Customer Contact Center - Complaints Escalation <ul style="list-style-type: none"> Ensures that both new and existing customer complaints are handled effectively Resolves more complex complaints escalated by customer contact center staff
AMS024	Customer Contact Center Planning and Monitoring <ul style="list-style-type: none"> Plans and monitors customer contact center schedules and operations Provides management information and productivity forecasts by observing customer call patterns Develops, monitors and analyzes key performance indicators May schedule call center equipment maintenance and repair appointments
AMS026	Customer Contact Center Process Improvement <ul style="list-style-type: none"> Analyzes and measures the effectiveness of existing contact center processes and develops sustainable, repeatable and quantifiable process improvements Collects and analyzes contact center activity data and initiates, develops and recommends improvements to systems, processes and procedures to increase productivity and reduce cost Monitors resource requirements, call volume, quality and efficiency of customer contact center operations Collaborates with training resources to provide training on improved processes
AMS030	High Volume Customer Billing <ul style="list-style-type: none"> Prepares, generates, prints, records and mails customer bills for monthly services, such as energy and telecommunications, using an automated high volume billing system Ensures that the automated billing system is operated and maintained in a manner that efficiently produces accurate bills Prepares daily, monthly, and other periodic billing summary reports and financial statements Maintains, monitors and analyzes account records

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Customer Support/Operations (continued)	AMS
Discipline	
AMS040 Customer Billing Resolution	
<ul style="list-style-type: none"> Investigates, analyzes, negotiates, resolves, documents, and reports on consumer and commercial billing issues and complaints against the organization Identifies solutions that address billing issues, and presents appropriate resolution options to customers Negotiates and authorizes billing settlements within established limits, and adjusts customer accounts 	
AMS090 Customer Contact Center Training/Coaching	
<ul style="list-style-type: none"> Provides training and development for contact center staff through continual review, feedback and on-the-job development Listens in on calls recordings and/or real time calls to evaluate the contact center staff skills in dealing with customers and accuracy and effectiveness of information or advice provided to customers May act as "floorwalkers" to give immediate assistance to contact center staff regarding customer inquiries which they are unable to answer 	
AMS100 Customer Contact Center Vendor Relationship Management	
<ul style="list-style-type: none"> Develops policies, standards and procedures for outsourcing the organization's customer contact center(s) to a contact center vendor Analyzes and reports on outsourcing vendor performance Manages the organization's relationship with a contact center outsourcing vendor and ensures that the vendor's performance meets the organization's requirements 	
AMS500 Customer Billing Systems Planning and Analysis	
<ul style="list-style-type: none"> Develops business cases for and proposes cost-effective improvements to customer billing and collection software to maximize system effectiveness Works closely with information management, accounting and legal staff to ensure systems meet internal and external standards and requirements Ensures that billing systems are compliant with regulations established by rate-setting, taxing and postal authorities Maintains extensive knowledge of customer billing government regulations 	
AMS510 Meter Reading - Residential	
<ul style="list-style-type: none"> Takes responsibility for training, productivity and accuracy of meter readers, and for maintaining balanced work loads May be responsible, from the business perspective, for evaluation, selection, implementation or management of automated meter reading and/or advanced meter management systems 	
AMS520 Meter Reading - Industrial	
<ul style="list-style-type: none"> Takes responsibility for training, productivity and accuracy of meter readers, and for maintaining balanced work loads 	
AMS999 Customer Support/Operations - No Applicable Discipline	
<ul style="list-style-type: none"> Responsibilities are within the Customer Support/Operations Function but are not described in other Discipline summaries 	

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Technical Customer Support	AMT
Provides post-sale technical support services to customers, including installation, troubleshooting, problem resolution and maintenance. Responds to customer questions regarding operation and malfunctions. Advises customers on preventative maintenance and configuration adjustments to improve product performance and customer satisfaction.	
Applicable Career Bands	
Discipline	
AMT000	Technical Customer Support Generalist/Multidiscipline <ul style="list-style-type: none"> Provides post-sale technical support services to customers, including installation, troubleshooting, problem resolution and maintenance of products and services Responsibilities are within the Technical Customer Support Function as a generalist or in a combination of Disciplines
AMT010	Technical Customer Support - Remote/Help Desk <ul style="list-style-type: none"> Delivers remote (e.g., telephone, online) post-sale troubleshooting and diagnostic support services to ensure that all products and services function properly Resolves technical support inquiries directly or indirectly through onsite and/or remote first-level support representatives
AMT020	Technical Customer Support - Customer Site <ul style="list-style-type: none"> Delivers post-sale services at customer sites including installation, maintenance and repair of organization and third-party products and services to ensure that all function properly Ensures customer satisfaction by advising customers on preventative maintenance and configurations that may favorably impact performance
AMT030	Technical Customer Support - Repair Center <ul style="list-style-type: none"> Tests, troubleshoots and repairs equipment and components in a repair center environment according to established quality procedures; conducts tests to ensure that repaired products meet technical specifications Advises product development of recurring component failures Traces and tests components to locate defects using a variety of test equipment including standard, bench-type, automatic test equipment, and nonstandard, specialized measuring instruments Compares test results with specifications and standards; records test results and data
AMT999	Technical Customer Support - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Technical Customer Support Function but are not described in other Discipline summaries

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Functions and Disciplines Definitions (continued)

Function	Code
Outsourced/Contract Manufacturing	AOO
Identifies, hires and oversees contract manufacturing vendors. Ensures that outsourced manufacturing operations meet established standards and specifications for quality and timeliness.	
Applicable Career Bands	
Discipline	
AOO000	Outsourced/Contract Manufacturing Generalist/Multidiscipline <ul style="list-style-type: none"> • Develops and maintains relationships with outsourced/contract manufacturers and suppliers of associated critical business services • Monitors outsourced/contract manufacturers and suppliers methods of operation to ensure that merchandise is produced according to established schedules, volumes, costs, and quality standards • Works with merchandising, technical design and sourcing to establish and maintain policies and standards for specifications, sourcing and contract manufacturing • Estimates manufacturing costs, determines time standards, and recommends product and process requirements for new and existing products • Maintains records and reporting systems for coordination of contract manufacturing operations • Responsibilities are within the Outsourced/Contract Manufacturing Function as a generalist or in a combination of Disciplines
AOO999	Outsourced/Contract Manufacturing - No Applicable Discipline <ul style="list-style-type: none"> • Responsibilities are within the Outsourced/Contract Manufacturing Function but are not described in other Discipline summaries


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Functions and Disciplines Definitions (continued)

Function	Code
Plant Administration	APA
Responsible for two or more nontechnical plant support Functions such as accounting, human resources, training, payroll, document control/records management, materials management, security and facilities management	
Applicable Career Bands	
25 30 35 40 45 50 55 60 65 70 75 80 85 90 95	
Discipline	
APA000	Plant Administration Generalist/Multidiscipline <ul style="list-style-type: none">• Develops, coordinates, implements and supervises nontechnical plant support activities such as accounting/finance, personnel administration, payroll, process control computer systems, document control/records management, materials management, training, and facilities management Functions• May also be responsible for IT, procurement, and business-planning activities
APA010	Major Staff Functions <ul style="list-style-type: none">• Responsible for two or more major staff Functions (e.g., materials management, process control computer systems, accounting/finance)
APA020	Other Staff Functions <ul style="list-style-type: none">• Responsible for two or more other staff Functions (e.g., human resources, payroll, facilities management)
APA999	Plant Administration - No Applicable Discipline <ul style="list-style-type: none">• Responsibilities are within the Plant Administration Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Project/Program Management	APM
Plans, monitors and manages internal projects from initiation through completion. Secures required resources, and uses formal processes and tools to manage resources, budgets, risks and changes. Manages projects to ensure on-time completion according to specifications and within budgeted costs. At the higher levels, incumbents manage large multifaceted projects; at lower levels incumbents may be concerned with clearly identifiable elements or functions within a larger project. Typically incumbents matched to this function are working towards or have achieved certification in project management.	
Applicable Career Bands	
	
Discipline	
APM000	Project/Program Management Generalist/Multidiscipline <ul style="list-style-type: none"> Plans, monitors and manages internal projects from initiation through completion Leads or coordinates project planning, resourcing, staffing, supply and subcontract management, progress reporting, troubleshooting and people management Ensures project results meet requirements regarding technical quality, reliability, schedule and cost Monitors performance and recommends schedule changes, cost adjustments or resource additions Responsibilities are within the Project/Program Management Function as a generalist or in a combination of Disciplines
APM010	Information Technology Project Management <ul style="list-style-type: none"> Manages all aspects of a diverse IT project or multiple IT projects, typically involving multiple disciplines in the IT function Utilizes expertise and leadership skills to direct staff and to resolve issues to ensure project goals and requirements are met At senior levels may employ scrum master techniques in Agile development practices
APM011	Human Resources Project Management <ul style="list-style-type: none"> Oversees the planning and implementation of new Human Resources initiatives and processes Leads and coordinates all aspects of a diverse, multi-disciplinary Human Resources (HR) project or multiple HR projects, including process re-engineering Utilizes expertise and leadership skills to direct staff and to resolve issues to ensure project goals are met
APM020	Facilities Construction Project Management <ul style="list-style-type: none"> Leads or coordinates construction projects, such as developing a new facility, the addition, expansion, or extension of an existing facility, or renovation/alterations to a facility in collaboration with project team, construction site and management Develops assignments, timetables and responsibilities for team members for the duration of the project Organizes and directs construction personnel, and ensures that materials and equipment resources are delivered on time
APM027	Construction Project Control Services <ul style="list-style-type: none"> Collaborates with project managers on the development and review of project plans, estimates, costs, contracts, schedules and resources Develops and implements project controls and monitoring procedures to ensure the achievement of project scope, schedule and cost objectives Collects, analyzes and reports on project data and costs from various stakeholders (e.g., engineering, procurement, construction and accounting)
APM032	Engineering Project Design <ul style="list-style-type: none"> Plans and designs a broad range of engineering projects in collaboration with internal and/or external stakeholders Defines project concept, scope, technical requirements and specifications Assists clients to plan for project execution and resolves related technical problems

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Project/Program Management (continued)	APM
Discipline	
APM080	Emerging Technologies Acquisition and Implementation Project Management <ul style="list-style-type: none"> Leads or coordinates projects to investigate, adopt and implement new and emerging technologies Designs and implements applications of new and emerging technologies Develops and deploys new business processes, policies and procedures to ensure successful integration of emerging technologies
APM510	Major Construction Project Management <ul style="list-style-type: none"> Leads major construction project planning, resourcing, staffing, supply and subcontract management, progress reporting, troubleshooting and people management Develops assignments, timetables and responsibilities for team members Ensures that materials and equipment resources are delivered on time Interfaces between the project team, construction site and management
APM530	Electric Transmission and/or Distribution Project Management <ul style="list-style-type: none"> Takes responsibility for projects involving transmission systems that carry high-power (typically above 34.5 KV) electricity from generating plants to substations; and/or distribution systems that carry electricity (typically 34.5 KV and below) from substations to final consumers Typical projects include substation construction, generator interconnection, new transmission line construction, rebuilding and replacing switching equipment, breakers, transformers, GSUs (generator step-up transformers), or rebuilding and installing new transmission lines
APM540	Gas Transmission and/or Distribution Project Management <ul style="list-style-type: none"> Takes responsibility for projects involving gas transmission systems that transport natural gas by pipeline, including incidental storage, and/or gas distribution systems that transport natural gas to the final consumer Typical projects include system expansion, installation and construction of pipelines, compression, storage, measurement, and meter and pump station facilities
APM550	Fossil Power Generation Project Management <ul style="list-style-type: none"> Takes responsibility for projects involving fossil power generating units that use coal, oil or natural gas Typical projects include plant renovation, modification or rehabilitation; replacement of the turbine, generator or boiler feed-pump; installation of gas recirculation systems; SCR (selective catalytic reduction) systems; or wet and dry scrubbers and flue gas desulphurization
APM560	Hydroelectric Power Generation Project Management <ul style="list-style-type: none"> Takes responsibility for projects involving hydroelectric power generating units that use the force of water being released from a reservoir through a dam Typical projects include modernization, automation and rehabilitation of the generator, spillway gate, headway or water passage; replacement of the turbine runner or exciter; fire protection system upgrades; and aeration system installation or improvements
APM570	Nuclear Power Generation Project Management <ul style="list-style-type: none"> Takes responsibility for projects involving nuclear power generating units that use energy produced by splitting uranium atoms (i.e., fission) Typical projects include construction design, construction studies, engineering, evaluation, NRC (Nuclear Regulatory Commission) submittals, replacement of head or steam generator, and outage-related projects
APM999	Project/Program Management - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Project/Program Management Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Quality Assurance Methods	AQY
<p>Develops and implements programs to establish and maintain quality standards of existing products and services, as well as developing programs to focus employees on quality improvement. Develops policies, procedures and methods to check product, material, components and/or operational quality and improve same.</p>	
Applicable Career Bands	
Discipline	
AQY000	Quality Assurance Methods Generalist/Multidiscipline <ul style="list-style-type: none"> • Develops policies, procedures and methods to evaluate and improve the quality of products, materials, components and/or operations • Develops, assures and maintains the quality of products and processes, including standard procedures (e.g., ISO 9001:2000, ISO 14000 family of standards), quality audits/review, Taguchi methods, process reengineering, etc. • Responsibilities are within the Quality Assurance Methods Function as a generalist or in a combination of Disciplines
AQY010	Quality Systems/Customer Satisfaction <ul style="list-style-type: none"> • Implements the Total Quality Management (TQM) philosophy • Measures customer satisfaction and takes action as appropriate • Implements "just in time" techniques
AQY020	Business Process Improvement <ul style="list-style-type: none"> • Analyzes and measures the effectiveness of existing business processes and develops sustainable, repeatable and quantifiable business process improvements • Researches best business practices within and outside the organization to establish benchmark data • Collects and analyzes process data to initiate, develop and recommend business practices and procedures that focus on enhanced safety, increased productivity, and reduced cost • Determines how new information technologies can support reengineering business processes • May specialize in one or more of the following areas: benchmarking, business process analysis and reengineering, change management and measurement, process-driven systems requirements
AQY040	Supplier Quality Assurance <ul style="list-style-type: none"> • Collaborates with suppliers to assure the quality of their products, materials, components and/or operations • Monitors supplier performance and supports efforts to develop and implement changes to improve the production process • Follows up with suppliers on quality deviations and ensures that solutions are identified and implemented
AQY999	Quality Assurance Methods - No Applicable Discipline <ul style="list-style-type: none"> • Responsibilities are within the Quality Assurance Methods Function but are not described in other Discipline summaries

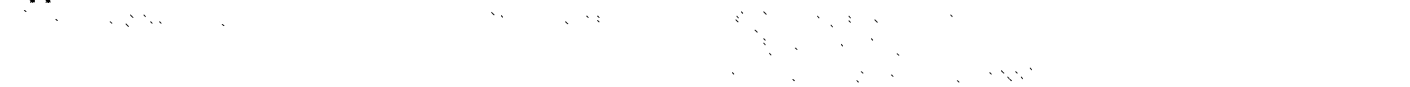
Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Real Estate and Facilities	ARE
Plans, controls and directs real estate activities such as site location and acquisition, right-of-way negotiation, building and land acquisition and disposition, space leasing, property management, and maintenance of properties.	
Applicable Career Bands	
Discipline	
ARE000	Real Estate and Facilities Generalist/Multidiscipline <ul style="list-style-type: none"> Plans, controls and directs real estate activities; identifies, acquires or leases land and buildings for the organization's operations May negotiate right-of-way easements Ensures the optimal utilization of the organization's facilities Disposes of facilities that are no longer required by the organization Responsibilities are within the Real Estate and Facilities Function as a generalist or in a combination of Disciplines
ARE010	Real Estate/Property Management <ul style="list-style-type: none"> Manages real estate to ensure maximum return and profitability Advises and assists with site selection, site acquisition, leasing space and other functions relating to land acquisition, negotiation and sale
ARE020	Facilities Management <ul style="list-style-type: none"> Ensures the optimal utilization of the organization's facilities Assesses and evaluates the physical space requirements of the organization and recommends plans to meet needs Ensures proper functioning of facilities through ongoing inspection and maintenance
ARE040	Land/Right-of-Way <ul style="list-style-type: none"> Obtains right-of-way easements for overhead or underground use Checks property titles to determine ownership, negotiates easements and price to be paid, prepares assessments, and arranges payment to grantor Assists in land acquisition for building facilities by obtaining land options Maintains permits and inspects completed work May coordinate acquisition activities with municipalities, governmental and regulatory agencies to ensure compliance with acquisition and easement requirements
ARE060	Agency Coordination <ul style="list-style-type: none"> Secures timely approvals from other utilities and governmental agencies for the installation, maintenance, relocation or removal of organization facilities Directs, negotiates and administers agreements as well as obtains required licenses and permits with government agencies allowing projects to be scheduled and completed within established time lines Prepares and processes documents for the right-of-way across government land and is responsible for the preparation and accuracy of billing or annual payments to the various agencies
ARE500	Conduit Joint Use Agreement Coordinator <ul style="list-style-type: none"> Administers joint use agreements between the utility and other organizations that use conduit (utility poles, trenches etc.) Maintains joint use conduit billing, receivables and accruals Monitors joint use conduit permit process, and validates locations, attachments and ownership Coordinates with electrical contractors and inspectors
ARE999	Real Estate and Facilities - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Real Estate and Facilities Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Supply Chain and Logistics	ASC
<p>Performs supply chain and logistics functions, which may include, but are not limited to, material procurement, production planning, inventory control, outsourcing, vendor selection, and distribution. Creates integrated processes among internal functions such as operations, purchasing and logistics, and outside suppliers. Focuses resources on continuous improvement of the movement of materials through various production processes, and establishes key performance metrics and benchmarks relating to supply chain planning/forecasting to measure actual performance against goals on a regular basis. Promotes alignment by understanding and communicating customer needs and requirements throughout the organization.</p>	
Applicable Career Bands	
	
Discipline	
ASC000	Supply Chain and Logistics Generalist/Multidiscipline <ul style="list-style-type: none"> • Performs supply chain and logistics functions, such as material procurement, production planning, inventory control, outsourcing, vendor selection and distribution • Creates integrated processes among internal functions (e.g., operations, purchasing and logistics) and outside suppliers • Responsibilities are within the Supply Chain and Logistics Function as a generalist or in a combination of Disciplines
ASC010	Supply Chain Development and Optimization <ul style="list-style-type: none"> • Coordinates and integrates the flow of materials and information among suppliers, manufacturers, distributors and customers • Conducts and/or manages strategic supply chain analysis • Identifies and recommends opportunities for improving efficiency, effectiveness and capabilities of the supply chain • Develops and implements supply chain designs, models, strategies and/or processes to improve the business
ASC012	Supplier Development <ul style="list-style-type: none"> • Coordinates the development of new products, materials and/or services with suppliers • Provides specifications and collaborates with suppliers on the organization's technical, operational and quality requirements • Collaborates with suppliers on technical aspects of development work, such as selecting materials • Administers a roster of approved suppliers
ASC013	Supplier Diversity Program Management <ul style="list-style-type: none"> • Develops, implements and coordinates a strategic sourcing/supplier diversity program to ensure equal opportunity in the organization's daily and strategic procurement activities • Establishes and maintains an extensive network of diverse suppliers for sourcing opportunities; participates in diversity councils and supplier diversity outreach events • Develops and maintains goals and metrics to measure and report activity, including contracts and spend with diverse suppliers • Administers all related programs to promote and encourage procurement activity among diverse suppliers, such as minority and women-owned businesses
ASC015	Materials Planning/Scheduling <ul style="list-style-type: none"> • Plans, schedules and monitors inbound movement of materials from suppliers • Determines material requirements and coordinates the efficient movement of materials with purchasing, production and engineering • Develops specifications for new contract orders

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Supply Chain and Logistics (continued)	ASC
Discipline	
<div data-bbox="191 510 300 541">ASC020</div> <div data-bbox="411 510 696 541">Materials Management</div> <ul style="list-style-type: none"> Coordinates incoming and outgoing movement and storage of raw materials, finished products and parts that include functions such as warehousing, shop, and delivery services to ensure material availability and delivery when needed to meet production schedules Compiles data on order volume, production schedules and forecasts, and applies statistical methods to estimate future materials requirements 	
<div data-bbox="191 688 300 720">ASC022</div> <div data-bbox="411 688 650 720">Forklift Operations</div> <ul style="list-style-type: none"> Transports merchandise using a forklift truck or reach truck to designated locations within the warehouse, which may include loading, unloading and order picking 	
<div data-bbox="191 783 300 814">ASC025</div> <div data-bbox="411 783 633 814">Inventory Control</div> <ul style="list-style-type: none"> Ensures that inventories are secure, properly identified and readily accessible to authorized personnel Maintains controls over various types of inventories (e.g., raw materials, subassemblies, finished goods) Conducts physical inventory counts and reconciles results with inventory records Ensures that quantities of incoming and outgoing shipments are correct Conducts analyses of inventory levels, and coordinates with production and sales requirements 	
<div data-bbox="191 961 300 993">ASC030</div> <div data-bbox="411 961 531 993">Logistics</div> <ul style="list-style-type: none"> Coordinates inbound and outbound logistical operations including inventory management, warehousing, and transportation to ensure sufficient supply of goods and products Controls the commercial impact of the complete range of activities from receiving, locating and dispatching, sourcing, purchasing and optimizing inventory levels Administers an effective system that meets the organization's inventory control needs through efficient transportation of raw materials, component parts and/or finished goods 	
<div data-bbox="191 1161 300 1192">ASC040</div> <div data-bbox="411 1161 582 1192">Warehousing</div> <ul style="list-style-type: none"> Administers and operates the organization's warehouses, including processing, packaging and storage of supplies, materials and equipment Accounts for all materials and supplies in the stores facilities; audits goods received into warehouse Oversees receipt, storage and shipment of materials, and related reporting in accordance with established procedures Prepares and coordinates schedules for shipping and receiving materials to control the flow of goods and regulate warehouse space Ensures the effectiveness of operating procedures, space utilization, and maintenance and protection of facilities and equipment 	
<div data-bbox="191 1444 300 1476">ASC050</div> <div data-bbox="411 1444 599 1476">Transportation</div> <ul style="list-style-type: none"> Analyzes transportation and distribution systems and procedures to ensure the efficient and economical delivery of the organization's products Reviews proposals and makes recommendations for modifications in rates and transportation regulations Evaluates freight classifications, tariff rates, and operating efficiency to ensure the proper delivery of products Plans and coordinates fleet operations including acquisition, scheduling, maintenance service and repair, and disposal of trucks, and hires common carriers (third-party transportation companies) as appropriate 	
<div data-bbox="191 1675 300 1707">ASC052</div> <div data-bbox="411 1675 1282 1707">Transportation - Delivery Vehicle Operations Generalist/Multidiscipline</div> <ul style="list-style-type: none"> Operates trucks, vans or similar vehicles to pick up and deliver products, supplies and equipment to and from organization, supplier and customer sites Actions may involve complex pickups and deliveries, e.g., night deliveries, international travel, transport of dangerous and hazardous products 	

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Supply Chain and Logistics (continued)	ASC
Discipline	
ASC053	Transportation - Light Delivery Vehicle Operations <ul style="list-style-type: none"> Operates light trucks, vans or similar vehicles to pick up and deliver products, supplies and equipment to and from organization, supplier and customer sites Actions may involve complex pickups and deliveries, e.g., night deliveries, international travel, transport of dangerous and hazardous products
ASC054	Transportation - Heavy Delivery Vehicle Operations <ul style="list-style-type: none"> Operates heavy trucks or similar vehicles to pick up and deliver products, supplies and equipment to and from organization, supplier and customer sites Actions may involve complex pickups and deliveries, e.g., night deliveries, international travel, transport of dangerous and hazardous products
ASC055	Transportation - Tractor Trailer Delivery Vehicle Operations <ul style="list-style-type: none"> Operates tractor trailer trucks to pick up and deliver products, supplies and equipment to and from organization, supplier and customer sites Actions may involve complex pickups and deliveries, e.g., night deliveries, international travel, transport of dangerous and hazardous products
ASC060	Purchasing Generalist/Multidiscipline <ul style="list-style-type: none"> Negotiates favorable terms, volume discounts and long-term contracts with suppliers, and prepares and processes requisitions and purchase orders for the procurement of goods, services and supplies for customer-related business processes or for internal use as a generalist or in a combination of Purchasing Disciplines
ASC070	Goods Purchasing <ul style="list-style-type: none"> Negotiates favorable terms, volume discounts and long-term contracts with suppliers, and prepares and processes requisitions and purchase orders for the procurement of goods and supplies (e.g., paper, office supplies, coffee, tea) Develops and implements strategies for cost reduction, supplier consolidation, quality improvements and process efficiencies Reviews purchase order claims and contracts for conformance to company policy, and discusses defects and delivery problems with suppliers and negotiates refunds
ASC080	Services Purchasing <ul style="list-style-type: none"> Negotiates favorable terms, volume discounts and long-term contracts with suppliers, and prepares and processes requisitions and purchase orders for the procurement of services (e.g., travel, cleaning, transportation, consulting services) Develops and implements strategies for cost reduction, supplier consolidation, service delivery improvements and process efficiencies Sources services for the organization and its employees (e.g., travel, cleaning, transportation, consulting services) or the negotiation of contracts with third-party suppliers (e.g., software licenses) Reviews purchase order claims and contracts for conformance to company policy, and discusses defects and delivery problems with suppliers and negotiates refunds
ASC090	Technical Purchasing <ul style="list-style-type: none"> Negotiates favorable terms, volume discounts and long-term contracts with suppliers, and prepares and processes requisitions and purchase orders for the procurement of technical equipment, custom engineered products, systems, software or components Acquires and maintains understanding of technology trends, market forces, cost trends, and supplier technology road maps Reviews purchase order claims and contracts for conformance to company policy, and discusses defects and delivery problems with suppliers and negotiates refunds

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

<u>Function</u>		<u>Code</u>
Supply Chain and Logistics (continued)		ASC
Discipline		
ASC095	Commodity Purchasing <ul style="list-style-type: none">• Develops and implements procurement plans and strategies to support forecasted needs for commodities (i.e., homogeneous products that are traded solely on the basis of price such as foodstuffs, metals and fuels)• Establishes and implements strategies for negotiating commodity purchase agreements based on in-depth knowledge of foreign and domestic markets for optimum pricing and terms• Purchases commodities in accordance with approved buying programs, using trade judgment in implementation and/or the established procurement policy	
ASC999	Supply Chain and Logistics - No Applicable Discipline <ul style="list-style-type: none">• Responsibilities are within the Supply Chain and Logistics Function but are not described in other Discipline summaries	

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Engineering	AZE
<p>Performs engineering work in operations, production, construction or maintenance environments. Designs and scales up manufacturing processes, instruments and equipment, and tests manufactured products to maintain quality. Plans, designs and estimates time and cost, and oversees construction and maintenance of structures, facilities, systems and components. Analyzes and develops solutions to engineering problems related to manufacturing equipment and systems or the causes of component failures. Develops and applies engineering standards and procedures, and provides advice on issues within the engineering field.</p>	
Applicable Career Bands	
Discipline	
AZE000	Engineering Generalist/Multidiscipline <ul style="list-style-type: none"> • Performs engineering work in operations, production, construction or maintenance environments • Responsibilities are within the Engineering Function as a generalist or in a combination of Disciplines
AZE037	Commissioning Engineering <ul style="list-style-type: none"> • Coordinates the safe and orderly commissioning of new and redesigned control and safety systems, electromechanical equipment, instruments and other systems and components • Monitors and ensures that systems and components are designed, installed, tested, operated and maintained according to operational requirements and standards for safety and reliability • Coordinates interface among various stakeholders (e.g., procurement, health and safety, quality control, engineering, construction, project management) • Documents commissioning procedures, provides operational assistance and troubleshooting, and conducts training
AZE120	Environmental Engineering <ul style="list-style-type: none"> • Analyzes environmental conditions and recommends changes to prevent or eliminate dangerous substances and materials • Ensures compliance with regulatory agency policies, including government legislation pertaining to the preservation of the environment • Develops, designs and may operate gauging equipment to determine the amounts of toxic pollutants present in air, land and water, and ensure compliance with regulatory agency policies
AZE160	Safety Engineering <ul style="list-style-type: none"> • Identifies, analyzes and controls occupational hazards and promotes worksite or product safety by applying knowledge of industrial processes, mechanics, psychology, physiology, and industrial health and safety laws • Advises on structural safety requirements based on failure mode analysis of such factors as fatigue, stability, stress, concentration and creep • Designs protective equipment or safety devices for machines, and redesigns machines and plant equipment to eliminate occupational hazards • Develops standards which set tolerances, stress ratios, strength of materials and other related engineering requirements • Reviews proposed occupational safety policies, guidelines and standards to determine their consistency with accepted engineering principles and practices; recommends technical changes as needed

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Engineering (continued)	AZE
Discipline	
AZE170	Structural/Facilities Engineering <ul style="list-style-type: none"> • Develops and implements capital improvement projects, such as construction, remodeling, renovation, and maintenance of buildings and facilities, including preliminary concept development, detailed engineering design and bidding • Conducts preliminary surveys and prepares schematics and work drawings for the construction and maintenance of new or remodeled structures and facilities • Examines and approves engineering and architectural drawings and design computations for buildings and facilities to ensure compliance with sound engineering practices and codes; incorporates functional requirements into facility requirements • Estimates cost of projects, writes contracts and specifications for labor, materials and equipment for construction projects, and secures bids from contractors • Conducts periodic inspections of work in progress and advises construction supervisors and contractors on plans and specifications • Inspects existing facilities and prepares reports on the condition, deficiencies observed, designs necessary for repairs, and estimated cost of repairs
AZE510	Bulk Power Market Strategy Design and Development Engineering <ul style="list-style-type: none"> • Develops new Independent System Operator (ISO) markets and makes continuous improvements to existing ISO market designs • Plans, defines, and executes market design initiatives in response to Federal Energy Regulatory Commission (FERC) directives, ISO business or market development strategies, or as requested by market participants • Architects, develops and implements new functionality and enhancements to existing functionality of the wholesale electricity markets to improve operating performance of the ISO's market and system operations Functions, improve market performance and ensure that markets provide appropriate economic incentives to all participants • Conducts analyses of existing market rules, manuals and operating procedures to quantify the competitive performance of the marketplace and recommends market design enhancements • Monitors development activities in other ISO/RTO markets to identify best practices, potential risks or failures, and undesirable behaviors by market participants experienced in other markets which may be precluded by effective market designs • Coordinates the development process internally with legal, operations and IT, and negotiates approval of design proposals externally through market participants and FERC, and ensures that the market design is understood, commercially and operationally feasible, and correctly implemented in IT systems and business processes • Ensures that market designs are coordinated with market and operating practices in external/adjacent markets and control areas to reduce or eliminate barriers to effective interregional trade • Participates in industry technical conferences to advocate for ISO positions and to obtain input on proposed market designs

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Engineering (continued)	AZE
Discipline	
AZE513	Bulk Power Modeling Engineering <ul style="list-style-type: none"> • Develops and maintains market and/or network models, supports the integration of market models with network models, and ensures that models produce consistent and credible results when implemented in applications programs • Develops, maintains, updates and improves network models (e.g., energy management system [EMS] state-estimator model, market model, flow gate model) and other data sources and tables used by the reliability, tariff, market and scheduling systems in accordance with applicable modeling controls and change control procedures and processes • Ensures that all systems and processes use correct input data and produce accurate results upon which system operators base their decisions • Conducts analyses of the market using power flow analysis tools, security-constrained unit commitment/dispatch simulation tools and statistical analysis • Continuously monitors real-time available transfer capability (ATC) calculator results and ATC values on open access same time information systems (OASIS) automation, results of joint operating agreement (JOA) processes, market flow calculator, market system, constraint manager and curtailment system to ensure a high level of accuracy in all calculations • Coordinates model development and data exchange with adjacent systems • May support and/or serve on internal and external committees, task forces, and working groups, representing the ISO/RTO to various constituencies • May develop and set up scenarios for the distributed time-triggered training simulator (DTS) to provide realistic training and drills on system emergencies
AZE515	Bulk Power Market Planning Engineering <ul style="list-style-type: none"> • Develops short- and/or long-term plans that guide market evolution for the region through knowledge of bulk electrical engineering, power market products, adjacent markets, fuels and environmental policy • Proposes, develops and evaluates new bulk power market design initiatives • Conducts detailed research and intelligence gathering to assess the organization's and industry performance • Performs formal cost/benefit analyses of options and devises measures to mitigate risk • Produces reports based on market impact studies and communicates the policy implications to management, stakeholders, regulators and other policy makers
AZE517	Bulk Power Market Operations Engineering <ul style="list-style-type: none"> • Coordinates the day-to-day operation of the bulk power market to efficiently and reliably operate an energy imbalance market across the regional bulk electric transmission grid • Administers on a continuous basis the bulk power market, ensuring market participants comply with applicable market protocols in real time • Develops and maintains market protocols and systems needed to facilitate the markets • Notifies the reliability coordinator of conditions that threaten system reliability, and complies with reliability directives issued by the reliability coordinator • Makes decisions and takes actions to ensure effective operation of the market and protection of the reliability of the bulk electric system consistent with reliability directives issued by the reliability coordinator • Determines the adequacy of energy and capacity available in the market, and works with market participants, reliability coordinators and others to ensure that the market has an adequate supply of energy and capacity • May have North American Electric Reliability Corporation (NERC) certification

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Engineering (continued)	AZE
Discipline	
AZE520	Bulk Power Market Monitoring and Compliance Engineering <ul style="list-style-type: none"> • Monitors compliance with industry, regulatory and Independent System Operator/Regional Transmission Organization (ISO/RTO) standards, and provides analyses of actual system operations with respect to those standards • Assembles and analyzes key power system data and documents the results to ensure that the bulk power markets operate in a reliable, economic and coordinated manner in accordance with ISO/RTO operating principles and standards and applicable regional and North American Electric Reliability Corporation (NERC) operating policies • Ensures that no market participant or group of market participants has an undue influence over the bulk power market • Communicates with market participant resource operators to secure relevant technical and operations information related to ISO inquiries of potential market power behavior • Identifies and recommends improvements to procedures and software tools for use in market monitoring • May perform or assist in the conduct of physical audits of facilities and evaluate how such facilities operate in the market to monitor for possible physical withholding or anticompetitive market behavior • May conduct bulk power market studies and market analyses such as the evaluation of generating unit performance, transmission system conditions and resource bidding patterns
AZE530	Electric System/Grid Planning Engineering <ul style="list-style-type: none"> • Takes responsibility for regional transmission system planning including load/zone planning and baseline reliability planning to ensure reliable operation under various operating scenarios in compliance with regulatory planning standards and guidelines • Interfaces with load-serving entities, generation entities, regulatory agencies, regional reliability councils, and other transmission providers to obtain necessary inputs into the planning process • Identifies and documents recurring system operation conditions and trends (e.g., low voltage, unusual flows) requiring planning attention • Assesses the capabilities of the regional transmission system and its compliance with the planning criteria • Conducts load saturation studies to determine the long-range substation needs in the service territory • Conducts power flow studies, builds power flow models, and prepares economic analyses to develop short- and long-term transmission system plans • Develops expansion plans for the regional transmission system and distribution substations • Provides technical support to licensing and certification proceedings related to new transmission lines and distribution substation sites • May represent the organization at regional transmission councils and/or regional transmission organizations
AZE533	Electric System/Grid Operations Engineering <ul style="list-style-type: none"> • Develops, implements and monitors engineering applications, processes and services associated with the performance of all coordinated operations responsibilities assigned to the independent coordinator of transmission (ICT) to prevent power outages and maintain reliable electric service • Requests and collects information, prepares and validates data, and executes computer runs for current, next-day, and other operational assessments of the transmission network, to support coordination and approval of generation and transmission maintenance outage requests, and to comply with external standards and requirements including reporting for market participants, government entities, and legal • Participates in identification of issues, and researches, analyzes and resolves disputes and inquires relating to market and grid operations data • Develops and periodically updates network model data as necessary for the interchange distribution calculator (IDC) load flow model • Develops, maintains, and supports coordinated operations applications, processes and documentation • Identifies opportunities for improved analyses of electric system operations data and prioritizes, develops and implements improvements including automated tools for monitoring and reporting operations data

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Engineering (continued)	AZE
Discipline	
AZE535	Energy Management System (EMS) Transmission Software Engineering <ul style="list-style-type: none"> • Defines and maintains bulk power transmission and generator models in the energy management system (EMS) and the operator training simulator (OTS) • Defines and maintains supervisory control and data acquisition (SCADA) data and definitions, maintains telemetry data accuracy, and evaluates and maintains the accuracy of model data in the EMS and OTS • Creates and ensures accurate display of single line diagrams (SLD) model and information in the EMS and OTS • Supports the specification, design, testing and development of the EMS system to ensure that it meets changing functional requirements • Ensures accurate modeling of automatic generation control (AGC) in the EMS • Ensures accurate modeling of state estimator, security analysis, transient limit calculator (TLC), optimal power flow (OPF), constraint logger, locational marginal pricing (LMP), and AGC in the OTS • Designs enhancements to the EMS system to improve the user interface • Supports metering projects by defining data and program specifications
AZE537	Interconnection Interface Services Engineering <ul style="list-style-type: none"> • Represents the organization on a variety of interconnection issues dealing with Regional Transmission Organizations (RTOs), and/or Independent System Operators (ISOs), Regional Reliability Councils (RRCs), the North American Electric Reliability Corporation (NERC), and the Federal Energy Regulatory Commission (FERC) • Serves as the organization's representative on RTOs or ISOs interconnection operating committees • Develops and ensures proper execution of RTO or ISO operating and accounting rules, procedures and guidelines • Participates in the development of short- and long-term rates and tariffs, and regulatory and business strategies for transmission assets in the organization's service areas • Coordinates wheeling (the transmission of electricity by an entity that does not own or directly use the power it is transmitting) of purchased power
AZE538	Renewable/Alternative Power Grid Interconnection Engineering <ul style="list-style-type: none"> • Works with renewable/alternative power project development staff in determining the feasibility, cost and technical requirements of interconnecting new renewable/alternative power projects to the transmission grid • Represents the organization on a variety of interconnection issues dealing with Regional Transmission Organizations (RTOs), and/or Independent System Operators (ISOs), Regional Reliability Councils (RRCs), and regional and national governmental and regulatory authorities • Serves as the organization's representative on RTOs or ISOs interconnection operating committees
AZE540	Electric Transmission Asset Planning and Operations Engineering <ul style="list-style-type: none"> • Plans and designs transmission systems with voltage levels typically above 34.5K • Designs transmission lines, bulk and distribution substations, and system protection and relaying • Focuses on transmission circuits, system interconnections, and bulk substations • Determines need, size, location and timing of system development, to balance economic, environmental, social and regulatory constraints and reliability needs • Coordinates activities with other utilities and nonutility generation • Tests and maintains on a system-wide basis the relay protective and control equipment essential to system operation and tests the condition of insulation of all major system electric apparatus
AZE541	Relay Test Engineering <ul style="list-style-type: none"> • Ensures that electrical protection systems are in compliance with all applicable standards and regulations (e.g., North American Electric Reliability Corporation [NERC]) • Coordinates relay testing and ensures that system maintenance is prioritized, completed and documented on schedule and in accordance with required procedures • Prepares audit and certification documentation to support audits and certifications from regulatory authorities • Reviews and updates relay test manual to ensure all relay testing methods are current and accurate

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

<u>Function</u>	<u>Code</u>
Engineering (continued)	AZE
Discipline	
AZE543	Electric Distribution Engineering <ul style="list-style-type: none"> Plans and designs distribution systems with voltage levels typically 34.5K and below Determines need, size, location and timing of system development, to balance economic, environmental, social and regulatory constraints and reliability needs
AZE545	Electric Systems Construction Design Standards Engineering <ul style="list-style-type: none"> Develops construction working drawings and instructional standards, material and tool specifications, and acceptable suppliers lists Directs or performs the investigative, testing and technical work necessary for developing design specifications and material lists
AZE550	Fossil Power Generation Engineering <ul style="list-style-type: none"> Designs, develops, and improves fossil power plant operations and/or maintains plant facilities and mechanical equipment in safe, efficient and economical working conditions through the direction or performance of maintenance activities May also be involved in engineering effectiveness studies relating to installation, calibration, maintenance and repair of instrumentation
AZE555	Hydroelectric Power Generation Engineering <ul style="list-style-type: none"> Designs, develops, and improves hydroelectric power plant operations and/or maintains plant facilities and mechanical equipment in safe, efficient and economical working conditions through the direction or performance of maintenance activities
AZE557	Renewable/Alternative Power Generation Engineering <ul style="list-style-type: none"> Designs, develops, and improves renewable/alternative power generation operations and/or maintains plant/installation facilities and mechanical equipment in safe, efficient and economical working conditions through the direction or performance of maintenance activities Participates in engineering effectiveness studies relating to installation, calibration, maintenance and repair of renewable/alternative power generation instrumentation
AZE558	Wind Resource Engineering <ul style="list-style-type: none"> Collects and analyzes wind data for wind power generation project analyses, and wind power systems mapping Designs, develops and/or operates software tools to aid meteorological data capture and collection May be involved in wind power generation project design
AZE560	Nuclear Power Plant Design and Systems Engineering <ul style="list-style-type: none"> Evaluates, monitors and conducts trend analyses on the performance of assigned nuclear systems and/or components Troubleshoots systems, performs predictive and root-cause analysis, and determines and initiates corrective action Conducts and reviews systems surveillance Designs, performs and verifies analysis of preventive maintenance programs of assigned systems and/or components Takes responsibility for design changes and execution of component changeouts May establish testing programs for reactors and reactor components May perform detailed inspection of reactor components and recommends overhaul work where necessary Provides technical oversight and support for maintenance activities

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Engineering (continued)	AZE
Discipline	
AZE563 Nuclear Reactor Physics Engineering	
<ul style="list-style-type: none"> Conducts and participates in analytical studies to evaluate nuclear fuel performance, plant system transient analysis, and in-core reactor physics using computer or other analytic techniques to ensure safe and reliable reactor operations Performs any or all of the following or related studies: core analysis (thermal or hydraulic) to establish core parameters; transient and safety analysis; nuclear fuel studies; reactor design and modification; reactor containment analysis; emergency core cooling system analysis; shielding studies; radioactive waste disposal studies; core neutronics and behavior studies; and reactor engineering aspects of nuclear licensing studies Plans, directs and coordinates receipt and storage of new nuclear fuel, and movement and temporary storage of spent nuclear fuel Maintains reactor core performance and stability during the movement of nuclear control rods that impact nuclear core reactivity, and therefore requires special qualification by the NRC 	
AZE565 Nuclear Fuel Procurement Engineering	
<ul style="list-style-type: none"> Determines the engineering specifications and technical and vendor quality safety requirements of all nuclear fuel Participates in core analysis to ensure the most cost-effective fuel design Assesses and reviews the classification and determines the most effective method of procurement of fuel that ensures compliance with the updated final safety analysis report (UFSAR) and their applicability to nuclear applications Requires knowledge of nuclear design engineering and uranium mining, conversion, enrichment and fabrication 	
AZE567 Spent Nuclear Fuel and High-Level Waste Storage Engineering	
<ul style="list-style-type: none"> Develops and implements the most cost-effective, intermediate-term storage solution for spent nuclear fuel and high-level waste until long-term storage is provided by the government May assist with low-level waste storage Participates in industry and government discussions regarding spent nuclear fuel storage 	
AZE570 Gas Transmission Engineering	
<ul style="list-style-type: none"> Plans, designs and engineers pipelines and compressor stations, and meter and regulator stations for natural gas transmission Installs and inspects rectifier stations and anodes used to minimize corrosive effects of static-electricity discharge between gas pipeline and ground 	
AZE573 Gas Distribution Engineering	
<ul style="list-style-type: none"> Plans, designs, and engineers the distribution systems for natural gas Installs and inspects rectifier stations and anodes used to minimize corrosive effects of static-electricity discharge between gas pipeline and ground 	
AZE575 Gas System Planning Engineering	
<ul style="list-style-type: none"> Determines need, size, location and timing of system development to balance economic, environmental, community and regulatory constraints and reliability needs 	
AZE577 Gas Reservoir Engineering	
<ul style="list-style-type: none"> Evaluates gas reserves, supplies and properties Estimates the gas and liquids reserves and provides estimates of long-term availability 	


Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Engineering (continued)	AZE
Discipline	
AZE579	Major Construction Engineering Generalist/Multidiscipline <ul style="list-style-type: none"> Plans, directs, and participates in the design, cost and scheduling of major construction projects Prepares plans, designs and analyses in accordance with established codes, standards and drawings Develops and maintains project budgets, forecasts, and cash flows Provides overall project schedule development, monitoring, progress measurement, and change order management Monitors and analyzes performance of subcontractors Inspects construction work in progress to ensure compliance with design specifications and recommends corrective action and/or improvements as needed Communicates with government agencies to ensure that building code regulations are met
AZE580	Major Construction Design Engineering <ul style="list-style-type: none"> Plans, directs, and participates in the design of major construction projects Prepares plans, designs and analyses in accordance with established codes, standards and drawings in areas such as steel, concrete and formwork/falsework Inspects construction work in progress to ensure compliance with design specifications and recommends corrective action and/or improvements as needed Communicates with government agencies to ensure that building code regulations are met
AZE583	Major Construction Cost Engineering <ul style="list-style-type: none"> Develops and maintains project budgets, forecasts, and cash flows for major construction projects Analyzes blueprints and other documentation to prepare estimates and support budget forecasts Monitors and analyzes performance of subcontractors on major construction projects Prepares project change orders to obtain budget for work Sets up cost monitoring and reporting systems and procedures
AZE585	Major Construction Scheduling Engineering <ul style="list-style-type: none"> Provides overall project schedule development, monitoring, progress measurement, and change order management for major construction projects Monitors, reviews and analyzes major construction project work schedules to identify resource gaps and equipment deficiencies, and submits periodic project status reports to management Works with all departments to ensure awareness of the overall major construction project schedule and maintains schedule integration Identifies schedule delays resulting from unanticipated events/risks and resource issues, determines their effects on the project schedule, and incorporates mitigation plans
AZE999	Engineering - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Engineering Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Technical Specialty/Skilled Trade	AZT
Provides technical support to engineers and scientists in areas such as production, operations, maintenance, safety, testing, process improvement or product development. Uses schematics, diagrams, written and verbal descriptions or defined plans to perform testing and troubleshooting on electronic or mechanical components, equipment or systems. Gathers, maintains, formats, compiles, and manipulates technical data using established formulae and procedures, and performs detailed mathematical calculations.	
Applicable Career Bands	
	
Discipline	
AZT000	Technical Specialty/Skilled Trade Generalist/Multidiscipline <ul style="list-style-type: none"> Provides technical support to engineers and scientists on a variety of technical tasks Develops and recommends procedures and methods, and prepares technical reports and documentation Performs technical evaluations of events to determine root cause; recommends corrective action Responsibilities are within the Technical Specialty/Skilled Trade Function as a generalist or in a combination of Disciplines
AZT010	Equipment Maintenance Technical Specialty <ul style="list-style-type: none"> Performs preventative maintenance and repairs on equipment and systems (e.g., mechanical, electrical) Evaluates and recommends equipment improvements to improve availability, capability and yield Performs equipment failure analyses (including preventative and unscheduled maintenance) Troubleshoots and diagnoses equipment problems Prepares technical reports to document equipment modifications and equipment maintenance procedures
AZT040	Facilities Technical Specialty <ul style="list-style-type: none"> Operates, monitors and maintains utilities including HVAC (heating, ventilation and air conditioning) setup, maintenance and balancing, WFI (water for injection), purified water and process equipment Maintains, troubleshoots and repairs facilities mechanical components and electrical equipment and systems in accordance with SOPs (standard operating procedures), internal requirements, manufacturer's specifications and safety policies Develops, maintains and secures a spare parts inventory of basic maintenance hand and power tools Recommends purchase of maintenance tools, equipment and supplies as required to streamline processes and increase efficiency Assists engineers in developing methods and procedures to control or improve facilities processes
AZT050	Process Technical Specialty <ul style="list-style-type: none"> Provides technical support to engineers to achieve improvements in cycle-time, yield, unit cost, quality, safety and compliance of production and operations processes Monitors instruments and equipment and collects operating data including calibration, inspection, testing, and repair activities to assist in making on-line adjustments to instruments, equipment or products Analyzes and resolves malfunctions and deviations of instruments and control systems to identify and resolve problems Conducts analyses and prepares reports using metrics from salvage tracking, trending, reporting and root cause analyses Maintains process designs to optimize process and facility use while conforming to standard operating procedures (SOPs) and good manufacturing practices (GMPs)

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Technical Specialty/Skilled Trade (continued)	AZT
Discipline	
AZT060	Quality Control/Inspection Technical Specialty <ul style="list-style-type: none"> Provides technical support to the quality and quality engineering (QE) functions Conducts nondestructive examination (NDE) and quality control (QC) inspections on products, materials, components, parts, etc., at various stages of the production process to ensure compliance with established quality and reliability standards Captures and analyzes statistical data from processes to either confirm compliance with established standards or identify deviations from standards Recommends new or enhanced methods, procedures and standards
AZT070	Test Equipment Technical Specialty <ul style="list-style-type: none"> Plans, lays out, assembles, modifies, validates, and maintains test equipment and related structural assemblies by reading and interpreting blueprints, engineering drawings, and sketches Assists engineers in operating test equipment to obtain performance data on parts and assemblies under varying operating conditions Collects, compiles and summarizes test data, and reviews results with engineering to resolve problems such as product or equipment issues, malfunctions and incomplete test data Diagnoses test equipment malfunctions, and services and repairs equipment as required
AZT080	CAD/CAE Drafting Technical Specialty <ul style="list-style-type: none"> Prepares and maintains detailed design drawings, schematics or specifications typically using Computer Aided Design (CAD) software Works closely with design originators (e.g., engineers, designers) to resolve design details or discrepancies, or to prepare drawings of unusual, complex, or original designs, which require a high degree of precision using CAD (Computer Aided Drafting) or CAE (Computer Aided Engineering) equipment Creates, modifies and controls detailed two- and three-dimensional parts and assembly drawings from engineers' and technicians' sketches, plans, written and verbal instructions Develops and maintains drafting standards and procedures Evaluates and recommends purchase of CAD/CAE-related computer hardware and software
AZT140	Skilled Trade Generalist/Multidiscipline <ul style="list-style-type: none"> Performs installations, preventive maintenance, and repairs on buildings, mechanical equipment and utility systems using one or more trade skills (e.g., electrical, mechanical, plumbing, carpentry) Prepares and maintains records of completed maintenance repair work Maintains current knowledge of all applicable procedures and safety measures
AZT150	Electrical Skilled Trade <ul style="list-style-type: none"> Repairs, installs, replaces and tests electrical circuits, equipment and appliances, using hand tools and testing instruments, to supply electrical power for lighting, equipment, and machine operations
AZT160	Welding Skilled Trade <ul style="list-style-type: none"> Welds all types of commonly used metals and alloys of various sizes, shapes, and thicknesses, including dissimilar metals such as copper to steel Operates various hand-welding, flame-cutting, hand-soldering, or brazing equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products May set up, operate, and/or tend to robots that weld, braze, solder, or heat treat metal products, components, or assemblies
AZT170	Mechanical Skilled Trade <ul style="list-style-type: none"> Repairs and maintains machinery and mechanical equipment, such as motors, pumps, conveyors, belts, fans, air conditioners, etc. Examines mechanical equipment to diagnose malfunctions Adjusts, cleans and lubricates parts of mechanical devices as necessary Requisitions replacement parts and equipment Oversees contractors at supervisory/management level

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Technical Specialty/Skilled Trade (continued)	AZT
Discipline	
AZT505	Geographical Information Systems (GIS) Technical Specialty <ul style="list-style-type: none"> • Develops and maintains GIS databases, applications and tools • Compiles geospatial data, conducts analyses, develops models, and produces maps and reports • Maintains and refines existing map databases to reflect the latest data
AZT510	Bulk Power Market/Electric System/Grid Technical Specialty <ul style="list-style-type: none"> • Supports engineers, economists, mathematicians or other quantitative professionals in the development of new Independent System Operator (ISO) markets and in making continuous improvements to existing ISO market designs • Assists with the development and implementation of new Functionality and enhancements to existing Functionality of the wholesale electricity markets to improve operating performance of the ISO's market and system operations Functions, improve market performance and ensure that markets provide appropriate economic incentives to all participants • Conducts analyses of existing market rules, manuals and operating procedures to quantify the competitive performance of the marketplace and recommends market design enhancements • Monitors development activities in other ISO/RTO markets to identify best practices, potential risks or failures, and undesirable behaviors by market participants experienced in other markets which may be precluded by effective market designs
AZT534	Bulk Power Metering Technical Specialty <ul style="list-style-type: none"> • Provides technical support and works to resolve day-to-day technical operating issues associated with the ISO meter collection, validation and distribution systems and business processing of settlement quality meter data (SQMD) • Develops and applies operations support/operations data and compliance standards, processes and controls for new and existing business practices to ensure SQMD accuracy and settlement-ready data transfers from one system to another • Reviews, analyzes, and responds to meter data disputes from market participants • Analyzes, researches, recommends and implements data corrections prior to the settlements process and works to ensure timely and accurate quality data transfers to settlements • Prepares and maintains documentation and procedures related to the operation and maintenance of metering applications and business processes
AZT537	Interconnection Interface Services Technical Specialty <ul style="list-style-type: none"> • Supports engineers, economists, mathematicians or other quantitative professionals in the development of short- and long-term rates and tariffs, and regulatory and business strategies for transmission assets in the organization's service areas • Assists the organization's representatives on a variety of interconnection issues dealing with Regional Transmission Organizations (RTOs), and/or Independent System Operators (ISOs), Regional Reliability Councils (RRCs), the North American Electric Reliability Corporation (NERC), and the Federal Energy Regulatory Commission (FERC) • Coordinates wheeling (the transmission of electricity by an entity that does not own or directly use the power it is transmitting) of purchased power
AZT538	Renewable/Alternative Power Grid Interconnection Technical Specialty <ul style="list-style-type: none"> • Assists engineers and renewable/alternative power project development staff in determining the feasibility and cost of interconnecting new renewable/alternative power projects to the transmission grid • Assists the organization's representatives on a variety of interconnection issues dealing with Regional Transmission Organizations (RTOs), and/or Independent System Operators (ISOs), Regional Reliability Councils (RRCs), and regional and national governmental and regulatory authorities

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Technical Specialty/Skilled Trade (continued)	AZT
Discipline	
AZT544	Electric Transmission and/or Distribution Technical Specialty <ul style="list-style-type: none"> Provides expert technical support for transmission systems that carry high-power electricity from generating plants to substations and/or distribution systems that carry electricity from substations to final consumers Focuses on transmission circuits, system interconnections, bulk substations, and/or distribution systems, including activities such as testing and maintaining relay protective and control equipment, and testing the condition of insulation of all major system electric apparatus
AZT550	Fossil Power Generation Technical Specialty <ul style="list-style-type: none"> Provides expert technical support for electric power generating units that use either coal, oil or natural gas Focuses on fossil power plant operations and/or maintenance of plant facilities and mechanical equipment, including activities such as studies relating to installation, calibration, instrumentation maintenance and repair
AZT555	Hydroelectric Power Generation Technical Specialty <ul style="list-style-type: none"> Provides expert technical support for electric power generating units that use the force of water being released from a reservoir through a dam Focuses on improving hydroelectric power plant operations and/or maintenance of plant facilities and mechanical equipment
AZT557	Renewable/Alternative Power Generation Technical Specialty <ul style="list-style-type: none"> Provides expert technical support for renewable/alternative power generating units Focuses on plant operations and/or maintenance of plant facilities and mechanical equipment, including activities such as installation, calibration, instrumentation maintenance and repair
AZT558	Wind Resource Technical Specialty <ul style="list-style-type: none"> Participates in wind data acquisition and analysis, and supports wind power generation project analysis, and wind power systems mapping Assists engineers in wind power generation project design Provides support to engineers in the design and development and/or operation of software tools to aid meteorological data capture and collection
AZT560	Nuclear Power Generation Technical Specialty <ul style="list-style-type: none"> Provides expert technical support for nuclear power generating units that use energy produced by splitting uranium atoms (i.e., fission) Focuses on improving nuclear power plant operations and/or maintenance of plant facilities and mechanical equipment, including activities such as trend analyses of assigned nuclear systems and/or components
AZT571	Gas Transmission and/or Distribution Technical Specialty <ul style="list-style-type: none"> Provides expert technical support for gas transmission systems that transport natural gas by pipeline including incidental storage, and/or gas distribution systems that transport natural gas to the final consumer by pipeline Focuses on pipeline and compressor systems for natural gas transmission and/or distribution, including activities such as installing and/or inspecting rectifier stations and anodes used to minimize corrosive effects of static-electricity discharge between gas pipeline and ground
AZT579	Major Construction Technical Specialty Generalist/Multidiscipline <ul style="list-style-type: none"> Supports major construction engineers in the preparation of plans, designs and analyses, development and maintenance of cost estimates, and drafting and monitoring of work schedules Inspects construction work in progress to ensure compliance with design specifications Maintains and reviews vendor design documentation to ensure compliance with design requirements Researches government building code regulations

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Technical Specialty/Skilled Trade (continued)	AZT
Discipline	
AZT580 Major Construction Design Technical Specialty <ul style="list-style-type: none"> • Supports construction design engineers in the preparation of plans, designs and analyses in areas such as steel, concrete and formwork/falsework • Inspects construction work in progress to ensure compliance with design specifications • Maintains and reviews vendor design documentation to ensure compliance with design requirements • Researches government building code regulations 	
AZT583 Major Construction Cost Technical Specialty <ul style="list-style-type: none"> • Supports construction cost engineers in the development and maintenance of cost estimates and tracking actual costs vs. budgets for major construction projects • Reviews blueprints and other documentation to prepare cost estimates • Collects information from engineers, architects, contractors and subcontractors regarding changes and adjustments to cost estimates • Maintains cost monitoring and reporting systems following established procedures 	
AZT586 Major Construction Scheduling Technical Specialty <ul style="list-style-type: none"> • Drafts and monitors work schedules for major construction projects • Tracks major construction project progress vs. schedule, and distributes project status reports to engineers and project managers • Calculates schedule delays resulting from unanticipated events/risks or resource issues, and drafts revised project schedules 	
AZT588 Major Construction Quality Control Technical Specialty <ul style="list-style-type: none"> • Inspects work in progress and completed phases on major construction projects to ensure that work is completed according to specifications, building codes and quality standards • Ensures that materials and equipment have been fully tested/inspected at the manufacturing facilities, and confirms that all documentation of passed inspections is in order • Directs the correction and/or replacement of material, equipment or work that does not conform with specifications, building codes and quality standards 	
AZT999 Technical Specialty/Skilled Trade - No Applicable Discipline <ul style="list-style-type: none"> • Responsibilities are within the Technical Specialty/Skilled Trade Function but are not described in other Discipline summaries 	

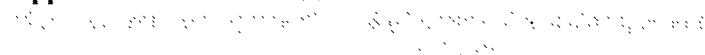
Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Manual/Unskilled Labor	AZU
<p>Performs a variety of general manual labor tasks (e.g., sweeping and cleaning floors and work areas, picking up papers and refuse from grounds, assisting in the handling of heavy materials, making minor repairs, mowing lawns, shoveling snow, cleaning, dusting, washing windows, moving and polishing furniture and equipment). Follows specific processes and procedures to maintain the buildings, facilities and grounds.</p>	
Applicable Career Bands	
Discipline	
AZU000	Manual/Unskilled Labor Generalist/Multidiscipline <ul style="list-style-type: none"> Performs a variety of general manual labor tasks, (e.g., lifting and moving materials, loading and unloading vehicles, digging and refilling holes)
AZU010	Maintenance <ul style="list-style-type: none"> Performs miscellaneous manual labor activities (e.g., sweeping and cleaning floors and work areas, picking up papers and refuse from grounds, assisting in the handling of heavy materials, making minor repairs, mowing lawns, and shoveling snow) Performs janitorial activities, such as cleaning, dusting, washing windows, moving and polishing furniture and equipment
AZU999	Manual/Unskilled Labor - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Manual/Unskilled Labor Function but are not described in other Discipline summaries


Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Account Management	CAM
Builds and maintains effective long-term relationships with a defined customer base to ensure a high level of satisfaction and increase revenues. Identifies, develops and typically closes new sales opportunities. Serves as the primary interface for all products and services, and creates demand for the organization's products and services by raising their profile with customers. Typically has a limited number of key/strategic accounts and maintains relationships with clients at the senior management or executive level.	
Applicable Career Bands	
	
Discipline	
CAM000	Account Management Generalist/Multidiscipline <ul style="list-style-type: none"> Builds and maintains effective long-term relationships and a high level of satisfaction with key senior-level decision makers and influencers at an assigned group of customer accounts that may include major strategic customers within a geographic or industry focus Identifies, develops and typically closes new sales opportunities Creates demand for the organization's products and services by raising their profile with customers Achieves revenue targets by increasing revenue spend per account May conduct regular status and strategy meetings with the customer's senior management to understand their needs and link them to the organization's product/service strategies Responsibilities are within the Account Management Function as a generalist or in a combination of Disciplines
CAM005	Account Management (Small/Non-Strategic Accounts) <ul style="list-style-type: none"> Builds and maintains effective long-term relationships and a high level of satisfaction with key senior-level decision makers and influencers at an assigned group of ten or more customer accounts, but not major or strategic accounts Identifies, develops and typically closes new sales opportunities Creates demand for the organization's products and services by raising their profile with customers Achieves revenue targets by increasing revenue spend per account May conduct regular status and strategy meetings with the customer's senior management to understand their needs and link them to the organization's product/service strategies
CAM500	Key Accounts <ul style="list-style-type: none"> Manages accounts of customers with substantial energy usage such as commercial or industrial consumers, universities and local municipalities Identifies, develops and typically closes new sales opportunities
CAM510	Industrial/Commercial - Account Management <ul style="list-style-type: none"> Manages accounts of industrial or commercial customers such as office complexes, hotels, hospitals and production sites Identifies, develops and typically closes new sales opportunities
CAM520	Residential Development - Account Management <ul style="list-style-type: none"> Manages accounts of developers of individual residences such as single-family homes, multifamily homes and apartment buildings Identifies, develops and typically closes new sales opportunities
CAM999	Account Management - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Account Management Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Bid Management	CBM
<p>Manages the bidding process from initial contact through to contract signing, but excluding the ongoing account management once the contract has been signed. Manages the preparation of bids and tenders with particular emphasis on establishing the organization's trading terms. Identifies and manages appropriate resources and team support to develop package and price custom solutions.</p>	
Applicable Career Bands	
	
Discipline	
CBM000	<p>Bid Management Generalist/Multidiscipline</p> <ul style="list-style-type: none"> • Manages the preparation of bids and tenders with particular emphasis on establishing the organization's trading terms • Collaborates with business developers and account managers to obtain and clarify customer requirements • Identifies and manages appropriate resources and team support to develop, package and price custom solutions • May coordinate legal sign-off on bids and proposals, placement of supplier orders, and acceptance of customer orders
CBM999	<p>Bid Management - No Applicable Discipline</p> <ul style="list-style-type: none"> • Responsibilities are within the Bid Management Function but are not described in other Discipline summaries


Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Client Service Delivery Management	CDM
<p>Manages ongoing contractual relationships and the operational delivery of services to clients for an account or group of accounts. Serves as the primary point of contact with clients and ensures client satisfaction.</p>	
Applicable Career Bands	
<p>Band 10 - 12</p>	
Discipline	
CDM000	Client Service Delivery Management Generalist/Multidiscipline <ul style="list-style-type: none"> Manages the delivery of contracted services to clients to ensure that SLAs (service level agreements) and KPI (key performance indicators) as defined in the relevant contracts are met or exceeded Maintains tight control over the project schedule, risks, scope of work and budget; ensures that operational teams and subcontractors have a clear understanding of client requirements Builds and maintains strong client relationships, and provides day-to-day client advice and support Promotes the organization's capabilities to clients, identifies sales opportunities to be forwarded to the account managers, and achieves contract extensions or additional business within the account(s) Contracts may involve both short- and long-term commitment of service and vary significantly in value/strategic importance
CDM500	Client Service Delivery Management - Key Accounts <ul style="list-style-type: none"> Manages accounts of customers with substantial energy usage such as commercial or industrial consumers, universities and local municipalities
CDM510	Client Service Delivery Management - Industrial/Commercial <ul style="list-style-type: none"> Manages accounts of industrial or commercial customers such as office complexes, hotels, hospitals and production sites
CDM520	Client Service Delivery Management - Residential Development <ul style="list-style-type: none"> Manages accounts of developers of individual residences such as single-family homes, multifamily homes and apartment buildings
CDM999	Client Service Delivery Management - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Client Service Delivery Management Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Direct Sales	CSD
<p>Closes direct sales of products and/or services in order to meet individual/team quotas and the organization's business objectives. Creates, monitors and revises lead generation plans to ensure a substantive sales opportunity pipeline. Typically, sales cycles are relatively short.</p>	
Applicable Career Bands	
<p>  </p>	
Discipline	
CSD000	Direct Sales Generalist/Multidiscipline <ul style="list-style-type: none"> Promotes and sells a portfolio of technical and/or nontechnical products and/or services and solutions directly to current and new end customers Informs customers of new product/service introductions and prices Creates, monitors and revises lead generation plans to ensure a substantive sales opportunity pipeline Responsibilities are within the Direct Sales Function as a generalist or in a combination of Disciplines
CSD500	Key Accounts Sales <ul style="list-style-type: none"> Manages accounts of customers with substantial energy usage such as commercial or industrial consumers, universities and local municipalities
CSD510	Industrial/Commercial Sales <ul style="list-style-type: none"> Manages accounts of industrial or commercial customers such as office complexes, hotels, hospitals and production sites
CSD520	Residential Development Sales <ul style="list-style-type: none"> Manages accounts of developers of individual residences such as single-family homes, multifamily homes and apartment buildings
CSD999	Direct Sales - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Direct Sales Function but are not described in other Discipline summaries

Functions and Disciplines Definitions (continued)

Function	Code	CUS
Sales Support and Administration		
<p>Supports sales representatives and channel partners in administrative areas such as order processing, sales quotes, sales information management, product training and financing. Tracks transactions and prepares reports regarding information such as order status, sales results, leads, sales quotas and sales representative earnings.</p>		
Applicable Career Bands		
Discipline		
CUS000	Sales Support and Administration Generalist/Multidiscipline <ul style="list-style-type: none"> Supports sales representatives and channel partners in administrative areas such as order processing, customer quotes, sales information management, product training and financing Responsibilities are within the Sales Support and Administration Function as a generalist or in a combination of Disciplines 	
CUS010	Sales Training <ul style="list-style-type: none"> Develops, plans and conducts training on techniques of selling the organization's products and/or services for sales representatives and reseller partners Designs training classes and training materials, and prepares documentation Conducts sales training needs assessments, and analyzes employee training needs to determine requirements for new program development Monitors and evaluates sales training programs, assesses results and implements enhancements as needed to ensure effectiveness of programs 	
CUS040	Sales Force Effectiveness <ul style="list-style-type: none"> Works with Sales management, Sales Training, Sales Planning, Sales Compensation, Marketing and other parts of the business to promote sales excellence through various means including metrics management, analyses of sales results, customer segmentation and targeting and coaching May be involved in the design and implementation of the activity statements of the Representatives, and design of sales incentives plans 	
CUS060	Sales Operations Support <ul style="list-style-type: none"> Provides operational support to sales management Plans and coordinates projects to improve the operational efficiency and effectiveness of the sales force Develops processes and procedures to support the sales process and participates in the development of requirements for sales support systems Maintains information of sales activities that support sales performance metrics and sales process improvement 	
CUS999	Sales Support and Administration - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Sales Support and Administration Function but are not described in other Discipline summaries 	

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Technical Sales Support	CUT
Provides technical knowledge, advice and support to sales representatives, resellers and customers during the sales process to resolve requests regarding product/service technical issues and to maximize the benefits derived from the organization's products and/or services.	
Applicable Career Bands	
Discipline	
CUT000	Technical Sales Support Generalist/Multidiscipline <ul style="list-style-type: none">• Provides technical expertise to sales representatives, resellers and customers during the sales process• Performs technical sales support at customer sites, or on a multiple-site basis• Resolves technical product/service issues• Assists customers during the sales process to maximize the benefits derived from the organization's products and/or services• Responsibilities are within the Technical Sales Support Function as a generalist or in a combination of Disciplines
CUT010	Presales Technical Support/Systems Engineering <ul style="list-style-type: none">• Provides presales technical expertise to the sales team and customers during the sales process• Provides technical input into bid proposals, projects and technical documents within the sales process, and identifies additional sales opportunities with existing customers• Installs and demonstrates the organization's products at customer sites• Collaborates with sales teams to develop and recommend products and services to meet customers' requirements• Maintains up-to-date and comprehensive knowledge of the organization's and competitors' products and/or services
CUT999	Technical Sales Support - No Applicable Discipline <ul style="list-style-type: none">• Responsibilities are within the Technical Sales Support Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Energy Delivery/Distribution	EDD
Directs, coordinates, implements and plans distribution activities that provide electric and/or gas service to customers including operation, line construction and/or maintenance.	
Applicable Career Bands	
Discipline	
EDD000	Energy Delivery/Distribution Generalist/Multidiscipline <ul style="list-style-type: none"> • Directs and coordinates distribution activities that provide electric and/or gas service to customers • Has responsibilities that typically include operations, line construction and/or maintenance and field engineering • Plans, directs and coordinates activities to prevent electric service interruptions and minimize the impact and restoration time of service interruptions • Schedules maintenance, trouble operations/service restoration, metering operations, and operations planning work • Provides adequate, accurate information to the customer service centers to keep affected customers properly informed • Ensures compliance with all safety, training and auditable guidelines, policies, practices, organization standards, and government regulations
EDD010	Electric Distribution Systems Operations <ul style="list-style-type: none"> • Operates electric power distribution system to ensure adequate distribution of electricity to meet power demands • Calculates load estimates according to corrected weather and consumer-demand records and notifies power supply function of electric power required to meet fluctuating demands • Monitors control board showing operating condition of lines and equipment throughout the system and makes adjustments or directs workers to make adjustments as conditions warrant • Directs substations to deenergize malfunctioning circuits or adjusts switches to ensure safety of maintenance crew and avoid interruptions of service during repairs • Notifies maintenance crew of location and deenergization of troubled sector, and verifies that workers are clear of repaired equipment before directing energization of circuit • May operate computer console programmed to automatically perform load-control functions
EDD020	Electric Distribution Construction and/or Maintenance <ul style="list-style-type: none"> • Constructs, removes and maintains electric distribution facilities and equipment including cable, transformers, breakers and other associated devices • May be responsible for sub transmission facilities (transmission lines of voltages between transmission voltages and distribution voltages, generally between 69 KV-138 KV) • May be responsible for field engineering and/or operating activities • Coordinates, schedules and supervises line crews (underground, overhead or substation) engaged in the construction, removal and maintenance of electric distribution facilities and equipment • Dispatches field crews, troubleshooters and testers engaged in the construction, maintenance and emergency restoration of electric distribution facilities and customers' service facilities • Responsibilities may be limited to an assigned district or area
EDD030	Electric Distribution/Substation Equipment Testing/Repair <ul style="list-style-type: none"> • Plans, schedules and coordinates distribution systems equipment testing, including construction testing, maintenance testing, and protective and control scheme testing • Ensures that equipment systems meet organization standards • Tests equipment such as reclosures, sectionalizers, transformers and other major equipment systems • Maintains knowledge of current test equipment and procedures

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Energy Delivery/Distribution (continued)	EDD
Discipline	
EDD040 Gas Distribution System Operations	
<ul style="list-style-type: none"> Calculates and controls the flow of natural gas through the system to maintain volume and pressure for adequate supply Monitors telemetric instruments to determine gas pressure, volume and consumption Reviews supply and demand data such as gas quality, pressure, weather conditions, and time of day to forecast load adjustment 	
EDD050 Gas Distribution Construction and/or Maintenance	
<ul style="list-style-type: none"> Constructs, removes and maintains gas distribution facilities and equipment including pipe, gauges and valves May be responsible for field engineering and/or operating activities Coordinates, schedules and supervises crews engaged in the construction, removal and maintenance of facilities and equipment for gas distribution Dispatches field crews engaged in the construction, maintenance and emergency restoration of gas service Responsibilities may be limited to an assigned district or area 	
EDD060 Corrosion Control	
<ul style="list-style-type: none"> Installs and inspects rectifier stations and anodes used to minimize corrosive effects of static-electricity discharge between gas pipeline and ground Measures electric current present in ground using voltmeter, ammeter and resistivity meter Compares electrical quantities with written standard to identify ground areas in which electric current exceeds permissible maximum Periodically tests rectifiers to verify efficiency and replaces defective units 	
EDD070 Distribution Meter Services Generalist/Multidiscipline	
<ul style="list-style-type: none"> Takes responsibility for customer metering activities including testing, repairs and maintaining stocks of metering equipment and meter testing equipment Installs, removes, field tests and maintains customer electric and/or gas meters in accordance with regulatory standards and organization's guidelines Develops, implements and maintains effective metering asset performance programs 	
EDD074 Distribution Meter Services - Electric Meter Services	
<ul style="list-style-type: none"> Tests, repairs and maintains inventory of electric metering equipment and meter testing equipment Installs, removes, field tests and maintains customer electric meters in accordance with regulatory standards and organization's guidelines Develops, implements and maintains effective metering asset performance programs 	
EDD076 Distribution Meter Services - Gas Meter Services	
<ul style="list-style-type: none"> Tests, repairs and maintains inventory of gas metering equipment and meter testing equipment Installs, removes, field tests and maintains customer gas meters in accordance with regulatory standards and organization's guidelines Develops, implements and maintains effective metering asset performance programs 	
EDD080 Quality Control/Inspection	
<ul style="list-style-type: none"> Develops, implements and maintains assessment, inspection, testing and maintenance programs for power lines, poles and gas distribution pipelines Supports and conducts nondestructive examination (NDE), quality engineering (QE), and quality control (QC) inspections Researches, interprets and explains inspection results Recommends changes to maintain compliance with regulatory requirements Maintains documentation to ensure proper test methodologies 	

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Energy Delivery/Distribution (continued)	EDD
Discipline	
EDD090	Proprietary Telecommunications Systems <ul style="list-style-type: none">• Designs, builds, maintains and manages the organization-owned communications system and facilities (e.g., fiber optic network installed on electric transmission or delivery lines, microwave)• Schedules regular maintenance and emergency maintenance, testing and inspecting all telecommunications facilities and equipment• Develops a long-term plan for communications facilities, budgets and equipment requirements
EDD999	Energy Delivery/Distribution - No Applicable Discipline <ul style="list-style-type: none">• Responsibilities are within the Energy Delivery/Distribution Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Energy Efficiency/Conservation	EDE
<p>Develops, implements and manages energy efficiency (EE), demand side management (DSM), demand response (DR) and conservation programs to meet established goals. EE programs include tighter building envelopes (e.g., insulation) upgrades, duct repair, high-efficiency HVAC upgrades and HVAC tune-ups that reduce energy consumption. DR programs include reliability-based programs (i.e., load response programs) such as direct load control and curtailable/interruptible load, and market-based programs (i.e., price response programs) such as real-time/critical peak pricing and demand bidding/buyback.</p>	
Applicable Career Bands	
<p>11-12, 13-14, 15-16, 17-18, 19-20, 21-22, 23-24, 25-26, 27-28, 29-30, 31-32, 33-34, 35-36, 37-38, 39-40, 41-42, 43-44, 45-46, 47-48, 49-50, 51-52, 53-54, 55-56, 57-58, 59-60, 61-62, 63-64, 65-66, 67-68, 69-70, 71-72, 73-74, 75-76, 77-78, 79-80, 81-82, 83-84, 85-86, 87-88, 89-90, 91-92, 93-94, 95-96, 97-98, 99-100</p>	
Discipline	
EDE000	Energy Efficiency/Conservation Generalist/Multidiscipline <ul style="list-style-type: none"> • Develops, promotes, implements and manages energy efficiency (EE), demand side management (DSM), demand response (DR) and conservation programs to meet established goals • Develops, promotes, implements and manages EE programs for new construction and upgrades to existing buildings such as tighter building envelopes (e.g., insulation) and HVAC ducts, high-efficiency HVAC equipment, and HVAC tune-ups to reduce energy demand and meet regulatory and corporate goals • Develops, promotes, implements and manages DSM programs such as energy surveys, weatherization, load management, efficient lighting retrofits and tighter building envelopes • Develops, promotes, implements and manages DR programs such as load management, standby generation, pricing signals and interruptible service • Provides customers with technical advice and assistance to design, procure and install energy efficient equipment and adopt demand-reduction initiatives • Conducts cost-benefit analyses and evaluates the impact of EE, DSM and DR programs • Ensures that programs are in compliance with regulatory guidelines, and may be responsible for Public Utility Commission (PUC) funds awarded for DSM/EE programs
EDE010	Energy Efficiency/Conservation - Commercial/Industrial Design <ul style="list-style-type: none"> • Develops and designs energy efficiency (EE), demand side management (DSM), demand response (DR) and conservation programs for commercial/industrial customers • Provides commercial/industrial customers with technical advice and assistance to design, procure and install energy efficient equipment and adopt demand-reduction initiatives • Conducts cost-benefit analyses and evaluates the impact of EE, DSM and DR programs Ensures that commercial/industrial programs are in compliance with regulatory guidelines, and may be responsible for Public Utility Commission (PUC) funds awarded for DSM/EE programs
EDE020	Energy Efficiency/Conservation - Residential Design <ul style="list-style-type: none"> • Develops and designs energy efficiency (EE), demand side management (DSM), demand response (DR) and conservation programs for residential customers • Provides residential customers with technical advice and assistance to design, procure and install energy efficient equipment and adopt demand-reduction initiatives • Conducts cost-benefit analyses and evaluates the impact of EE, DSM and DR programs • Ensures that residential programs are in compliance with regulatory guidelines, and may be responsible for Public Utility Commission (PUC) funds awarded for DSM/EE programs
EDE030	Energy Efficiency/Conservation - Commercial/Industrial Implementation <ul style="list-style-type: none"> • Performs on-site inspections of commercial/industrial customer facilities to identify opportunities to conserve energy • Provides commercial/industrial customers with technical advice and assistance to design, procure and install energy efficient equipment and adopt demand-reduction initiatives • Assists with designing and launching new programs • Markets efficiency programs to eligible customers • Provides customer analysis and support for demand side management projects and processes

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

<u>Function</u>	<u>Code</u>
Energy Efficiency/Conservation (continued)	EDE
EDE040	Energy Efficiency/Conservation - Residential Implementation <ul style="list-style-type: none">• Performs on-site inspections of residential customer homes to identify opportunities to conserve energy• Provides residential customers with technical advice and assistance to design, procure and install energy efficient equipment and adopt demand-reduction initiatives• Markets efficiency programs to eligible customers• Provides customer analysis and support for demand side management projects and processes
EDE999	Energy Efficiency/Conservation - No Applicable Discipline <ul style="list-style-type: none">• Responsibilities are within the Energy Efficiency/Conservation Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Meteorology	EEM
Prepares short-, medium- and long-term weather forecasts for energy markets including temperature, precipitation and wind, placing specific emphasis on heavy demands on generating plants, transmission systems, and transportation systems.	
Applicable Career Bands	
EEM000, EEM010, EEM020, EEM999	
Discipline	
EEM000	Meteorology Generalist/Multidiscipline <ul style="list-style-type: none">• Studies weather information, such as air pressure, temperature, humidity, and wind velocity, and applies physical and mathematical relationships to make short-range and long-range predictions• Works with generation, transmission and trading to understand weather impacts on decisions• Liaises with forecasters and analysts to research developing tools and projects to advance forecasting quality• Interprets Doppler radar data and satellite imagery and analyzes other meteorological and hydrological data using computer-based analytical and mapping tools
EEM010	Meteorology - Regulated <ul style="list-style-type: none">• Creates meteorological forecasts primarily for regulated businesses
EEM020	Meteorology - Nonregulated <ul style="list-style-type: none">• Creates meteorological forecasts primarily for nonregulated businesses
EEM999	Meteorology - No Applicable Discipline <ul style="list-style-type: none">• Responsibilities are within the Meteorology Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Energy Supply	EFS
Negotiates and administers long-term energy commodity supply/purchase contracts to meet the organization's needs. Coordinates with the organization's energy marketing and trading group as necessary to ensure profitable transaction terms.	
Applicable Career Bands	
Discipline	
EFS000	Energy Supply Generalist/Multidiscipline <ul style="list-style-type: none"> Plans and secures adequate supplies of one or more energy commodities to meet the organization's needs Develops long-term supply agreements, which may include transportation and storage arrangements Ensures all contracts and transactions are conducted within prescribed legal policies and procedures, and works closely with other functions to determine pricing and terms of new contracts Negotiates purchase contracts Develops forecasts of needed supply, transportation requirements, and available storage Manages relationships with suppliers Administers and monitors existing purchase and sale contracts Identifies new long-term supply opportunities, and assists in determining prices and contract terms for profitable transactions, in conjunction with the energy marketing and trading group
EFS005	Fossil Fuel Purchasing <ul style="list-style-type: none"> Develops and implements procurement plans to support forecasted fossil fuel needs and objectives Establishes and implements strategies for negotiating fossil fuel purchase agreements based on in-depth knowledge of foreign and domestic fossil fuel markets for optimum pricing and terms Employs knowledge of fuel qualities, plant utilization constraints, transportation options, risk management, and procurement evaluation models to develop and implement optimal procurement strategies Contributes expertise in the areas of fossil fuel markets to other fuel-related projects and to the development of current short-term and long-term price forecasts and fuel trading
EFS999	Energy Supply - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Energy Supply Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Fossil Power Generation	EGF
Operates and maintains fossil fuel-based electric generator units and associated equipment, fossil fuel handling, and waste disposal equipment. Maintenance activities include maintenance engineering to meet system load requirements and maintaining power plant electrical and mechanical equipment. Fossil power generation units use coal, oil or natural gas. Coal is burned to produce steam, which flows into a turbine and spins a generator. Oil and natural gas are ignited to power combustion turbine generators. Inside the generator, coils of wire spin in a magnetic field and electricity is produced.	
Applicable Career Bands	
<div> <div> </div> <div> </div> </div>	
Discipline	
EGF000	Fossil Power Generation Generalist/Multidiscipline <ul style="list-style-type: none"> Meets system load requirements of the plant and maintains power plant electrical and mechanical equipment Takes responsibility for the operation of generator units and associated equipment, operation of fossil fuel handling and waste disposal equipment, and maintenance activities including maintenance engineering
EGF010	Fossil Power Predictive Maintenance <ul style="list-style-type: none"> Identifies, analyzes and implements predictive maintenance technologies and procedures Collects and analyzes operating experience data Conducts vibration analysis, rotor-dynamic analysis, thermography, lubrication analysis, laser shaft alignment, electric motor testing, balancing, thermal growth monitoring, and failure analysis for root-cause evaluations
EGF020	Fossil Power Maintenance Planning <ul style="list-style-type: none"> Takes responsibility for short- and long-range maintenance planning, coordination and scheduling of routine and emergency plant outages Coordinates contracted and organization maintenance staff resources, monitors spare parts inventory and system load requirements to minimize overall time and cost of maintenance activities Creates, reviews and evaluates overhaul and outage reports, and incorporates improvement techniques in future procedures and plans Does not have line responsibilities for plant maintenance
EGF030	Fossil Power Maintenance <ul style="list-style-type: none"> Maintains power plant electrical and/or mechanical equipment in safe, efficient and economical working condition, including the direction of maintenance engineering Manages the replacement, installation and removal of mechanical and/or electrical equipment and associated structures
EGF040	Fossil Power Operations <ul style="list-style-type: none"> Meets system load requirements of the plant engaged in operation of boiler-turbine generator units and associated equipment, operation of fuel handling and waste disposal equipment Maintains plant operating records and performance reports
EGF050	Gas Turbine/Peaking Unit <ul style="list-style-type: none"> Takes responsibility for generation facilities that fulfill peak power requirements on demand Directs and coordinates the operation, maintenance and general administration of the unit and its personnel Peaking units are usually combustion gas-fired turbines, and may be located in a larger power plant that meets baseline demand or in a separate facility

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

<u>Function</u>	<u>Code</u>
Fossil Power Generation (continued)	EGF
Discipline	
EGF060 Fossil Power Outage Management	
<ul style="list-style-type: none"> • Directs fossil plant outage-related activities consistent with the organization's policy and regulatory requirements • Provides planning and scheduling support, coordinates cost estimates and procurement, and designs support plans prior to and during the outage • Monitors progress of the outage, identifies problems, revises schedules and budgets, and prepares reports and other documentation on the status of the outage to management • Coordinates operations, maintenance and construction activities during the outage • Assesses the adequacy of outage planning and systems 	
EGF070 Fuel Yard	
<ul style="list-style-type: none"> • Takes responsibility for fossil fuel yard activities including fueling operations, fuel-handling equipment maintenance and management, and ash pond and coal pile • Coordinates with fossil fuel suppliers, railroad dispatchers, shippers and purchasing regarding fossil fuel deliveries 	
EGF080 Ash Disposal	
<ul style="list-style-type: none"> • Takes responsibility for ash separation, storage, by-product utilization, disposal and transportation • Identifies economical and environmentally sound ash recycle uses (e.g., cement, asphalt, gypsum, flowable fill) • Markets ash and ash by-products to generate revenues that defray disposal costs • Works with fuel yard to remove problem materials from the waste stream prior to combustion to improve ash marketability and thereby reduce disposal costs • Conducts routine testing and analysis of ash to determine chemical composition • Classifies waste as hazardous or nonhazardous based on toxicity using Environmental Protection Agency (EPA) criteria • May manage, monitor and control runoff or leaching into surface or ground waters and parts per million discharged into the air so that the degree of pollution does not exceed government and organization limits 	
EGF090 Fossil Power Quality Control/Inspection	
<ul style="list-style-type: none"> • Develops, implements and maintains in-service inspection (ISI), testing and maintenance programs • Supports and conducts nondestructive examination (NDE), quality engineering (QE), and quality control (QC) inspections • Researches, interprets and explains inspection results • Recommends changes to maintain compliance with regulatory requirements • Maintains documentation to meet licensing obligations and ensure proper test methodologies are in place 	
EGF999 Fossil Power Generation - No Applicable Discipline	
<ul style="list-style-type: none"> • Responsibilities are within the Strategic Planning/Corporate Development Function but are not described in other Discipline summaries 	

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Hydroelectric Power Generation	EGH
Operates and maintains hydroelectric generator units and associated equipment in a continuous, efficient and economical manner to meet system load requirements of the plant.	
Applicable Career Bands	
<p> <i>EGH000</i> - Hydroelectric Power Generation Generalist/Multidiscipline <i>EGH010</i> - Hydroelectric Maintenance Planning <i>EGH020</i> - Hydroelectric Operations and/or Maintenance <i>EGH030</i> - Hydroelectric Outage Management <i>EGH999</i> - Hydroelectric Power Generation - No Applicable Discipline </p>	
Discipline	
EGH000	Hydroelectric Power Generation Generalist/Multidiscipline <ul style="list-style-type: none"> Operates hydroelectric generator units and associated equipment as a generalist or in a combination of Disciplines in the Hydroelectric Power Generation Function Takes responsibility for maintenance activities, including maintenance engineering to meet system load requirements of the plant and maintaining hydroelectric power plant electrical and mechanical equipment
EGH010	Hydroelectric Maintenance Planning <ul style="list-style-type: none"> Performs short- and long-range maintenance planning; coordinates and schedules routine and emergency hydroelectric plant outages Coordinates contracted and organization maintenance staff resources, monitors spare parts inventory and system load requirements to minimize overall time and cost of maintenance activities Creates, reviews and evaluates overhaul and outage reports, and incorporates improvement techniques in future procedures and plans Does not have line responsibilities for plant maintenance
EGH020	Hydroelectric Operations and/or Maintenance <ul style="list-style-type: none"> Operates, controls and maintains hydroelectric generating equipment and related mechanical and hydraulic equipment including manual controls for water wheels at the hydroelectric generating station Analyzes defective operation and adjusts equipment to minimize interruptions of power demands Inspects operating equipment, identifies equipment malfunctions, and initiates maintenance repair orders Replaces generator brushes, cleaning insulators, lubricating machines, and removing marine life and debris from water-intake screens or racks Notifies watershed tender (waterworks) when subnormal speed of generating units requires adjustment of reservoir floodgates to increase pressure of water, which rotates water wheels Distributes power output among generating units according to power demands Records control-board meter and gauge readings Operates feeder switchboard to control distribution of electric power over feeder circuits between generating station and substations
EGH030	Hydroelectric Outage Management <ul style="list-style-type: none"> Directs hydroelectric plant outage-related activities consistent with the organization's policy and regulatory requirements Provides planning and scheduling support, coordinates cost estimates and procurement, and designs support plans prior to and during the outage Monitors progress of the outage, identifies problems, revises schedules and budgets, and prepares reports and other documentation on the status of the outage to management Coordinates operations, maintenance and construction activities during the outage Assesses the adequacy of outage planning and systems
EGH999	Hydroelectric Power Generation - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Hydroelectric Power Generation Function but are not described in other Discipline summaries









Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Renewable/Alternative Power Generation	EGR
Operates and maintains renewable/alternative power generation facilities and associated equipment. Includes maintenance activities such as maintenance engineering to meet system load requirements and maintaining power generation equipment. Renewable/alternative power generation units use wind, geothermal, biomass or other renewable resources.	
Applicable Career Bands	
Discipline	
EGR000	Renewable/Alternative Power Generation Generalist/Multidiscipline <ul style="list-style-type: none"> Maximizes the power generated by the renewable/alternative generation plant/facility and maintains electrical and mechanical equipment Takes responsibility for the operation of generation units and associated equipment, and maintenance activities including maintenance engineering
EGR020	Renewable/Alternative Power Generation Maintenance Planning <ul style="list-style-type: none"> Plans, coordinates and schedules short- and long-range maintenance, and routine outages Coordinates contracted and internal maintenance staff resources, monitors spare parts inventory and system load requirements to minimize overall time and cost of maintenance activities Creates, reviews and evaluates overhaul and outage reports, and incorporates improvement techniques in future procedures and plans Does not have line responsibilities for maintenance of renewable/alternative generation facilities
EGR030	Renewable/Alternative Power Generation Maintenance <ul style="list-style-type: none"> Maintains renewable/alternative power generation facilities and mechanical equipment in safe, efficient and economical working condition, including the direction of maintenance engineering Manages the replacement, installation and removal of mechanical and/or electrical equipment and associated structures
EGR040	Renewable/Alternative Power Generation Operations <ul style="list-style-type: none"> Maximizes the power generated by the renewable/alternative generation plant/facility and maintains electrical and mechanical equipment Maintains renewable/alternative facility operating records and performance reports
EGR060	Renewable/Alternative Power Generation Outage Management <ul style="list-style-type: none"> Directs renewable/alternative facility outage-related activities consistent with the organization's policy and regulatory requirements Provides planning and scheduling support, coordinates cost estimates and procurement, and designs support plans prior to and during the outage Monitors progress of the outage, identifies problems, revises schedules and budgets, and prepares reports and other documentation on the status of the outage to management Coordinates operations, maintenance and construction activities during the outage Assesses the adequacy of outage planning and systems
EGR999	Renewable/Alternative Power Generation - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Renewable/Alternative Energy Power Generation Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Energy Marketing and Trading	EML
<p>Purchases and sells energy directly to/from end users and intermediaries under negotiated rates and terms, and trades energy. Responsible for transaction structuring and negotiation, risk management and trading of energy, and distribution and/or interconnection and transmission of energy through other organizations' transmission and distribution systems.</p>	
Applicable Career Bands	
<p>  Career Band 1  Career Band 2  Career Band 3  Career Band 4  Career Band 5  Career Band 6  Career Band 7  Career Band 8 </p>	
Discipline	
EML000	Energy Marketing and Trading Generalist/Multidiscipline <ul style="list-style-type: none"> • Purchases and sells power/energy directly to/from end users and intermediaries under negotiated rates and terms, and trades energy • Takes responsibility for transaction structuring and negotiation, risk management and trading of energy, and distribution and/or interconnection and transmission of energy through other organizations' transmission and distribution systems
EML010	Energy Marketing and Trading Financial Analysis <ul style="list-style-type: none"> • Conducts economic studies and analyses of the energy market, employing a complete understanding of customer needs and available alternatives • Maintains competitive information regarding loads, resources and prices • Develops and analyzes financial models and forecasts • Contributes to the development of new and existing products and services to increase wholesale market presence • Supports trading strategy development
EML999	Energy Marketing and Trading - No Applicable Discipline <ul style="list-style-type: none"> • Responsibilities are within the Energy Marketing and Trading Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Energy Marketing	EMM
Purchases and sells energy products and services directly to/from end users and intermediaries under negotiated rates and terms. Responsibilities include transaction structuring and negotiation, risk management, and distribution and/or interconnection and transmission of energy through other organizations' transmission and distribution systems.	
Applicable Career Bands	
Discipline	
EMM000	Energy Marketing Generalist/Multidiscipline <ul style="list-style-type: none"> Sells energy products, supplies and services Identifies prospects, prepares proposals, makes presentations, and negotiates and administers intermediate and long-term energy sales contracts Manages ongoing business relationships with customers, including identifying strategies to meet customer requirements Solicits and evaluates energy market alternatives and prepares sales recommendations
EMM011	Power Marketing <ul style="list-style-type: none"> Identifies, negotiates and administers intermediate and long-term power sales contracts Manages ongoing business relationships with customers, including identifying strategies to meet customer requirements Solicits and evaluates energy market alternatives and prepares sales recommendations
EMM021	Power Origination <ul style="list-style-type: none"> Identifies, and originates large, complex, long-term power commodity, asset and energy transactions Oversees all aspects of the deal-making process, including analysis, due diligence, negotiation and closing
EMM070	Energy Asset Optimization <ul style="list-style-type: none"> Maximizes returns on the company's asset portfolio (e.g., generation, pipeline, refinery) through activities such as long-term commodity trading, marketing, and hedging activities, including crude and residual fuel oil, natural gas, power, emissions, coal and interest rates May also be responsible for community and regulatory relations, and fulfilling budgets and contractual requirements
EMM080	Energy Deal Structuring <ul style="list-style-type: none"> Develops innovative hedging approaches for complex structured energy commodity transactions involving third party customers Prices commodities and develops new energy risk management products for third-party customers Works closely with marketing and origination and may be involved with regional strategy development
EMM999	Energy Marketing - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Energy Marketing Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Energy Trading	EMT
<p>Buys and sells energy-related products on a short-term and intermediate basis, transacting for profit or on behalf of the organization's assets. Conducts trading by contract with producers, other energy traders, and consumers within the organization's trading strategy guidelines, risk limits, and government regulations.</p>	
Applicable Career Bands	
Discipline	
EMT000	Energy Trading Generalist/Multidiscipline <ul style="list-style-type: none"> • Buys and sells energy-related products on a short-term and intermediate basis • Uses futures and other financial tools as a service for customers and for internal hedging of deals
EMT002	Energy Trading - Electricity <ul style="list-style-type: none"> • Buys and sells electricity in the short- and intermediate-term markets to maximize profitability while ensuring that all activities are aligned with the organization's portfolio strategy • Focuses on commodity trading activities, develops new products and innovative arrangements to meet customer needs, and structures complex purchases and sales that cross commodity transactions • Typically has full authority to commit to individual purchase or sale of electricity transactions up to a predefined limit • Conducts trades via contacts with producers, traders and power delivery organizations in compliance with the organization's energy marketing policies and procedures • Monitors competitive conditions and variables that influence pricing, availability and reliability of power sources
EMT004	Energy Trading - Natural Gas <ul style="list-style-type: none"> • Buys and sells natural gas in the short- and intermediate-term markets to maximize profitability while ensuring that all activities are aligned with the organization's portfolio strategy • Focuses on commodity trading activities, develops new products and innovative arrangements to meet customer needs, and structures complex purchases and sales that cross commodity transactions • Typically has full authority to commit to individual purchase or sale of natural gas transactions up to a predefined limit • Conducts trades via contacts with producers, traders and power delivery organizations in compliance with the organization's energy marketing policies and procedures • Monitors competitive conditions and variables that influence pricing, availability and reliability of power sources
EMT011	Physical Power Trading <ul style="list-style-type: none"> • Buys and sells power on a short- and intermediate-term basis • Systematically analyzes power trading opportunities to have an optimal transaction portfolio • Executes power trades that optimize profits and level of risk exposure and monetize the value of the inherent optionality in the trading book's contracts • Uses futures and other financial tools as a service for customers and for internal hedging of power deals
EMT016	Carbon/Emissions Trading <ul style="list-style-type: none"> • Buys and sells carbon, emissions or renewable energy credits (REC) on a short-term and intermediate basis • Analyzes carbon, emissions or REC trading opportunities systematically to have an optimal transaction portfolio • Executes carbon, emissions, or REC trades that optimize profits and level of risk exposure and monetize the value of the inherent optionality in the trading book's contracts • Uses futures and other financial tools as a service for customers and for internal hedging of carbon, emissions, or REC deals

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

<u>Function</u>		<u>Code</u>
Energy Trading (continued)		EMT
Discipline		
EMT017	Real-Time Power Trading <ul style="list-style-type: none">• Buys and sells power on a short-term (hourly, daily) basis• Analyzes and reacts to market conditions	
EMT020	Derivatives Trading <ul style="list-style-type: none">• Applies financial hedge strategies to optimize risk positions using futures, options and derivative products• Delivers incremental value to the organization through speculative trading within defined limits• Ensures that risks are fully assessed, valuation of products is appropriate, and transactions are priced to compensate for risks incurred• May design customized hedges using derivative securities (i.e., swaps, futures, options)	
EMT999	Energy Trading - No Applicable Discipline <ul style="list-style-type: none">• Responsibilities are within the Energy Trading Function but are not described in other Discipline summaries	

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Energy Trading Operations/Support	EMU
Provides operational trading support to the commercial energy groups (e.g., energy trading, energy marketing, energy origination) within the organization. Responsibilities include mid and back office activities such as scheduling, transportation, commodity accounting, settlements, and contracts.	
Applicable Career Bands	
Discipline	
EMU000	Energy Trading Operations/Support Generalist/Multidiscipline <ul style="list-style-type: none"> Provides operational support for energy transactions initiated and negotiated by individuals in the organization's energy marketing and trading group
EMU015	Gas Transportation and Exchange <ul style="list-style-type: none"> Takes responsibility for the transportation and exchange activities required to transport natural gas to local distribution companies, end-user customers and other required locations Assesses risk and develops long-term plans to assure supply is available as needed Negotiates major agreements and assures all agreements are within the policies and procedures of the organization Negotiates the transportation and exchange agreements to implement gas sales Prepares transportation and exchange economic evaluations and justifications using a long-term perspective
EMU020	Energy Trading Contract Administration <ul style="list-style-type: none"> Reviews and validates all contracts, commitments, and obligations of the organization which deal with the buying, selling and transporting of energy-related products Negotiates contracts and ensures review of standard and non-standard purchase, sale, exchange and transmission agreements for conformity with underlying master agreements Reviews and, where necessary, modifies confirmation language to minimize transactional risk Coordinates with legal, risk management, accounting and other functions as necessary
EMU025	Energy Trading Scheduling Generalist/Multidiscipline <ul style="list-style-type: none"> Nominates and schedules energy commodity purchases and sales on the 24-hour desk Tracks relevant data on the appropriate systems
EMU047	Energy Trading - Generation Dispatch <ul style="list-style-type: none"> Obtains and monitors real-time status information pertaining to available generation to meet the organization's obligations, and identify excess generation available for the spot market Coordinates communication and data exchange (real-time, scheduled, and historical) between the organization's generating plants and buyers (e.g., independent system operators, power pools, transmission operators) Dispatches bulk electric power in support of the organization's power trading activities Schedules and coordinates the load levels of power plant generation in order to maintain system integrity Administers interchange contractual obligations, evaluates the pricing of off-system sales and purchases, and may be responsible for granting major circuit and generation capacity outages
EMU999	Energy Trading Operations/Support - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Energy Trading Operations/Support Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
New Power Plant Development Project Management	ENP
Directs, manages and oversees the planning, design, licensing, construction and start-up of new power plants. Responsibilities may include contracts, supply chain, quality assurance, government relations, public relations, etc. Identifies, evaluates and hires outside contractors as needed throughout all phases of development, and coordinates with internal technical functions.	
Applicable Career Bands	
Discipline	
ENP000	New Power Plant Development Project Management Generalist/Multidiscipline <ul style="list-style-type: none"> • Directs, manages and oversees the planning, design, licensing, construction and start-up of new power plants • Identifies, evaluates and hires outside contractors as needed throughout all phases of development • Coordinates with internal technical functions • Takes responsibility for functions including contracts, supply chain, quality assurance, government relations, public relations, etc.
ENP010	New Nuclear Power Plant Development Project Management <ul style="list-style-type: none"> • Directs, manages and oversees the planning, design, licensing, construction and start-up of new nuclear power plants • Identifies, prepares and obtains regulatory approval for combined construction and operating licenses (COL), early site permits (ESP), and other permits required by the NRC (Nuclear Regulatory Commission) and state and/or local governments for the construction and operation of new nuclear plants • Takes responsibility for various phases of a new plant development project, including staffing, contract negotiations, supply chain, quality assurance and government and public relations
ENP020	New Fossil Fuel Power Plant Development Project Management <ul style="list-style-type: none"> • Directs, manages and oversees the planning, design, licensing, construction and start-up of new fossil power plants • Identifies, prepares and obtains regulatory approval for the construction and operation of new fossil fuel power plants
ENP030	New Renewable/Alternative Energy Development Project Management <ul style="list-style-type: none"> • Directs, manages and oversees the planning, design, licensing, construction and start-up of new renewable/alternative energy power projects • Identifies, prepares and obtains regulatory approval for the construction and operation of new renewable/alternative energy power projects • Takes responsibility for various phases of a new renewable/alternative energy development project, including staffing, contract negotiations, supply chain, quality assurance, and government and public relations
ENP999	New Power Plant Development Project Management - No Applicable Discipline <ul style="list-style-type: none"> • Responsibilities are within the New Power Plant Development Project Management Function but are not described in other Discipline summaries


Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Gas Transmission	ETG
Coordinates gas transmission system operations, construction and/or maintenance of facilities, pipelines and compressors, and measurement. Calculates and controls the flow of natural gas through the system to maintain volume and pressure for an adequate supply.	
Applicable Career Bands	
ETG000, ETG010, ETG020, ETG030, ETG040, ETG999	
Discipline	
ETG000	Gas Transmission Generalist/Multidiscipline <ul style="list-style-type: none"> Coordinates gas transmission system operations, construction and/or maintenance of facilities, pipelines and compressors as a generalist or in a combination of disciplines in the Gas Transmission Function Calculates and controls the flow of natural gas through the system to maintain volume and pressure for an adequate supply Ensures receipt and delivery of gas from one point to another within the system and from outside systems Monitors telemetric instruments to determine gas pressure, volume and consumption Reviews supply-and-demand data such as gas quality, pressure, weather conditions, and time of day to forecast load adjustment Ensures operational compliance with all gas transmission regulations
ETG010	Pipeline <ul style="list-style-type: none"> Operates and maintains transmission pipelines typically within a geographic area Coordinates inspection of pipelines, corrosion control, coordination of construction and/or maintenance, and project documentation Ensures that all policies and procedures for safe operations are maintained, and trains personnel on all procedures
ETG020	Gas Supply <ul style="list-style-type: none"> Plans and secures adequate supplies of natural gas to meet the organization's needs Develops long-term supply, which may include transportation and storage arrangements Negotiates gas purchase contracts with suppliers and, as required, with transportation organizations and storage operators Develops forecasts of needed supply, transportation requirements, and available storage Manages relationships with suppliers Administers and monitors existing purchase and sale contracts within prescribed legal policies and procedures, and works closely with other groups to determine pricing and terms of new contracts Identifies new long-term supply opportunities, and, working with the energy marketing and trading group, assists in determining prices and contract terms for profitable transactions
ETG030	Gas Scheduling <ul style="list-style-type: none"> Schedules and nominates gas purchases and sales on the transporting pipeline system Negotiates operating balance agreements (OBA) and reconciles OBA imbalances Implements curtailments as necessary to maintain system integrity Records all relevant data and transactions on the monitoring system to ensure proper tracking for the generation of reports
ETG040	Compressor Station <ul style="list-style-type: none"> Operates and maintains compressor stations Takes responsibility for inspection of pipelines, corrosion control, coordination of construction and/or maintenance, and project documentation Ensures that all policies and procedures for safe operations are maintained, and trains personnel on all procedures
ETG999	Gas Transmission - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Gas Transmission Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Electric Transmission Construction and/or Maintenance	ETM
Constructs, installs, maintains and repairs facilities, devices and equipment used in high-voltage (typically above 34.5 KV) electric transmission in accordance with government regulations and the organization's policies, procedures, and standards.	
Applicable Career Bands	
	
Discipline	
ETM000	Electric Transmission Construction and/or Maintenance Generalist/Multidiscipline <ul style="list-style-type: none"> Constructs, removes and maintains electric transmission facilities and equipment including cables, transformers, towers and other associated devices within transmission guidelines established by the transmission planning function to meet system requirements as a generalist or a combination of Disciplines in the Electric Transmission Construction and/or Maintenance Function Ensures reliable performance of all transmission lines by effective design and selection of transmission line equipment based on life cycle costs, reliability and guidelines established by transmission planning to meet system requirements Dispatches field crews, troubleshooters and testers engaged in the construction, maintenance and emergency restoration of electric transmission facilities, secures transmission line construction and/or modification documentation, and coordinates with surrounding transmission organizations to integrate activities into the overall power grid May coordinate loading, unloading, transporting and relocating large power equipment, and scheduling and/or procuring rental and shared equipment (e.g., cranes, trucks, track equipment, oil processing trailers, mobile power equipment)
ETM002	Electric Transmission Construction <ul style="list-style-type: none"> Constructs new electric transmission facilities and equipment including cable, transformers, towers and other associated devices using effective design and transmission line equipment selection based on life cycle costs, reliability, and guidelines established by transmission planning Dispatches field crews and testers engaged in the construction of electric transmission facilities, secures transmission line construction documentation and coordinates with surrounding transmission organizations to integrate activities into the overall power grid May coordinate loading, unloading, transporting and relocating large power equipment, and scheduling and/or procuring rental and shared equipment (e.g., cranes, trucks, track equipment, oil processing trailers, mobile power equipment)
ETM004	Electric Transmission Maintenance <ul style="list-style-type: none"> Maintains electric transmission facilities and equipment including cable, transformers, towers and other associated devices within guidelines established by transmission planning to meet system requirements Dispatches field crews, troubleshooters and testers engaged in the maintenance and emergency restoration of electric transmission facilities, secures transmission line modification documentation and coordinates with surrounding transmission organizations to integrate activities into the overall power grid May coordinate loading, unloading, transporting and relocating large power equipment, and scheduling and/or procuring rental and shared equipment (e.g., cranes, trucks, track equipment, oil processing trailers, mobile power equipment)
ETM010	Electric Transmission Equipment Testing <ul style="list-style-type: none"> Plans, schedules, coordinates and supervises transmission systems equipment testing, including construction testing, maintenance testing, and protective and control scheme testing to ensure that equipment systems meet organization and regulatory standards Tests reclosures, sectionalizers, transformers and other major electric transmission and distribution (T&D) equipment systems Maintains knowledge of current test equipment and procedures

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

<u>Function</u>		<u>Code</u>
Electric Transmission Construction and/or Maintenance (continued)		ETM
Discipline		
ETM020	Electric Transmission Equipment Repair <ul style="list-style-type: none">Plans, schedules, coordinates and supervises transmission systems equipment repairs to ensure that equipment systems meet organization and regulatory standardsRepairs reclosures, sectionalizers, transformers and other major transmission and distribution equipment systems	
ETM999	Electric Transmission Construction and/or Maintenance - No Applicable Discipline <ul style="list-style-type: none">Responsibilities are within the Electric Transmission Construction and/or Maintenance Function but are not described in other Discipline summaries	

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Electric Transmission Operations	ETO
Operates safe, reliable, stable and economic round-the-clock electric transmission system. Ensures that the system meets demand by executing switching orders, continuous monitoring and balancing of power flow, and responding to system disturbances.	
Applicable Career Bands	
Discipline	
ETO000	Electric Transmission Operations Generalist/Multidiscipline <ul style="list-style-type: none"> Operates a safe, reliable, stable and economic electric transmission system round-the-clock operation as a generalist or in combination of Disciplines in the Electric Transmission Operations Function Ensures the electric transmission system meets demand while maintaining system parameters such as frequency, line flows and transmission-level voltage within prescribed limits Acts promptly to return the system to a stable state when voltage and/or frequency excursions occur Maintains real-time compliance with reliability standards set by regulatory authorities
ETO005	Electric Transmission System Operations - Reliability <ul style="list-style-type: none"> Monitors and controls the bulk power transmission system parameters including system load, frequency, voltage, line flows, transformer flows, tap positions and direction of energy flow, and maintains acceptable voltage profiles in accordance with established reliability standards Analyzes SCADA (supervisory control and data acquisition) inputs of system voltage, line loading and system alarms, and takes appropriate Takes direct and timely real-time actions (without obtaining higher level approval) including directing shedding of firm load to prevent or alleviate system operating limit (SOL) and interconnection reliability operating limit (IROL) violations, dispatching generation and initiating transmission switching to maintain transmission-level voltages Integrates resource plans "ahead of time," maintains load/interchange/generation balance within the metered boundary, and supports system frequency in real time Ensures real-time security-constrained (security refers to system parameters and not a physical threat) economic generation dispatch throughout the balancing authority area Maintains real-time compliance with reliability standards set by regulatory authorities Determines trouble location and analyzes cause, routes trouble report to appropriate unit for corrective action and advises all those affected of corrective actions Evaluates, coordinates and directs all switching operations to take transmission facilities out of service for maintenance and return those facilities to service
ETO014	Electric Transmission System Operations - Interchange Scheduling/Load Balancing <ul style="list-style-type: none"> Accommodates requests for power flow between adjacent electronic systems in real-time Monitors published system limits regarding ramp limitations Curtails or otherwise modifies existing scheduled interchanges as required by regulations and as directed by reliability coordinators and transmission operators Verifies scheduled interchanges with neighboring transmission systems Implements emergency schedules as required by reserve sharing arrangements
ETO016	Electric Transmission System Operations - Generation Operations <ul style="list-style-type: none"> Operates the real-time bulk power system by directing the output of generating units to maintain system control performance within established criteria at the lowest possible cost Coordinates load estimating, determination of generation requirements, and generating unit scheduling and dispatching for all generation under the operational control of the organization Communicates with balancing authorities, and generating plants regarding the status of generation units Maintains a balance between electric generation and total customer electricity demand, and maintains operating reserves to provide for the reliable operation of the electronic transmission system for actual or potential situations

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

<u>Function</u>	<u>Code</u>
Electric Transmission Operations (continued)	ETO
Discipline	
ETO020	Reliability Coordination
	<ul style="list-style-type: none"> Ensures the reliability of the bulk power transmission system within a reliability authority area (i.e., transmission operations reliability in a geographic area defined by the North American Electric Reliability Corporation [NERC]) Acts and directs immediate actions by transmission operators, transmission owners, balancing authorities, generator operators, load-serving entities, distribution operators and purchasing-selling entities within the reliability coordinator area to preserve the integrity and reliability of the bulk electric system Coordinates reliability processes and emergency response actions with operating entities within the reliability authority area and with neighboring areas to ensure the reliability of the interconnected grid Establishes and implements policies and related practices in accordance with industry and NERC standards Operates within an organization responsible for the reliability of multiple transmission systems across a specific region, including independent system operators (ISOs), regional transmission organizations (RTOs) and other NERC reliability coordinators Administers the Open Access Same Time Information System (OASIS)
ETO030	Electric Transmission Tariff Administration
	<ul style="list-style-type: none"> Develops, maintains, and provides real-time and short-term operational administration of the Open Access Transmission Tariff (OATT) to provide reliable transmission service across the electric transmission grid, ensure tariff compliance and support market participant satisfaction Evaluates and processes transmission service requests using Open Access Same Time Information System (OASIS) and tools in a timely manner to ensure optimal reliability of the bulk electric system; intervenes manually in the automated processes as necessary Calculates available transmission capability (ATC), evaluates and acts on transmission service requests in a manner consistent with regulatory requirements and reliability criteria Ensures automated processes perform as necessary to facilitate the tariff administration Function Collaborates with the reliability coordinators and is aware of the status of the transmission system and the implications of selling new service, both in "real-time" and for the near-term future
ETO040	Transmission Operations Compliance
	<ul style="list-style-type: none"> Develops, implements and maintains an operating an reliability standards compliance framework Monitors transmission operations to ensure compliance with national, regional and local regulations Evaluates operating events, disturbances an performance Provides support in responding to regulatory data requests, investigations, compliance and regulatory audits and customer inquires Ensures that all documentation is complete, accurate and in compliance with applicable regulatory standards
ETO999	Electric Transmission Operations - No Applicable Discipline
	<ul style="list-style-type: none"> Responsibilities are within the Electric Transmission Operations Function but not described in other Discipline summaries

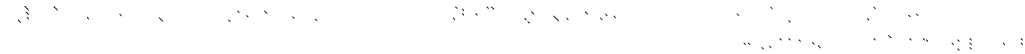
Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Electric System/Grid and Bulk Power Training	ETT
Designs, develops, implements and maintains technical training programs for electric system/grid operations employees and bulk power market participants.	
Applicable Career Bands	
Discipline	
ETT000	Electric System/Grid and Bulk Power Training Generalist/Multidiscipline <ul style="list-style-type: none"> Provides training on processes, operating and market systems, programs, and developments as a generalist or in a combination of Disciplines in the Electric System/Grid and Bulk Power Training Function Trains internal and external customers on energy management systems (EMS) applications, advanced network applications, and simulations designed to enhance performance in real-time power system events Designs, develops and maintains assessment tools for each training session that adhere to North American Electric Reliability Corporation (NERC) continuing education requirements to evaluate effectiveness of training Conducts training needs assessments, including conferring with management and staff, to identify specific skill/knowledge gaps and training objectives Collaborates with other Functions (e.g., engineering, operations) to ensure that course materials reflect current specifications and to obtain information on new processes and equipment
ETT999	Electric System/Grid and Bulk Power Training - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Electric System/Grid and Bulk Power Training Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Vegetation Management and Forestry	EVM
Manages vegetation and/or forestry and electrical line clearance in service areas to prevent power outages. Develops and evaluates new methods for line clearance and vegetation management in compliance with regulations and standards, and prepares and administers bids and contracts.	
Applicable Career Bands	
	
Discipline	
EVM000	Vegetation Management and Forestry Generalist/Multidiscipline <ul style="list-style-type: none"> • Manages the line clearance crews in service areas • Clears vegetation around electric power lines in conformance with specifications to prevent power outages as a generalist or in a combination of Disciplines in the Vegetation Management and Forestry Function • Develops and evaluates new methods for line clearance and vegetation management in compliance with regulations and standards • Evaluates and resolves customer-related problems, questions and complaints involving vegetation management practices • Acts as the organization's spokesperson on external vegetation management • May prepare and administer bids and contracts • May be responsible for groundskeeping
EVM010	Vegetation Contracted Services Management <ul style="list-style-type: none"> • Prepares and administers bids and contracts for subcontracted vegetation management services • Communicates specifications for vegetation management services to subcontractors • Coordinates day-to-day operation and administration of line-clearing contracts • Monitors subcontractor performance to ensure quality meets contract terms
EVM020	Forestry Management <ul style="list-style-type: none"> • Manages and develops forest lands and resources in service areas • Plans and directs forestation and reforestation projects • Develops and implements forest safety and educational programs • May prepare and administer forestry management bids and contracts
EVM030	Arboriculture <ul style="list-style-type: none"> • Instructs property owners about the need for proper tree maintenance near utility lines • Advises customers on tree species that are suitable for planting near power lines • Plans tree maintenance, awards contracts, and inspects the work performed
EVM999	Vegetation Management and Forestry - No Applicable Discipline <ul style="list-style-type: none"> • Responsibilities are within the Vegetation Management and Forestry Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function

Nuclear Plant Maintenance

Maintains nuclear power plant systems, equipment and structures in accordance with NRC (Nuclear Regulatory Commission) regulations. Ensures that equipment performs reliably and at an optimum level through effective implementation of corrective, preventative and predictive programs and procedures.

Applicable Career Bands

11-13, 14-16, 17-19, 20-22, 23-25, 26-28, 29-31, 32-34, 35-37, 38-40, 41-43, 44-46, 47-49, 50-52, 53-55, 56-58, 59-61, 62-64, 65-67, 68-70, 71-73, 74-76, 77-79, 80-82, 83-85, 86-88, 89-91, 92-94, 95-97, 98-100

Code

NPM

Discipline

NPM000

Nuclear Plant Maintenance Generalist/Multidiscipline

- Analyzes equipment breakdowns, determines the proper corrective action, and directs repairs as a generalist or in a combination of Disciplines in the Nuclear Plant Maintenance Function
- Evaluates recurring maintenance problems and devises procedures for solution
- Reviews and revises maintenance procedures

NPM010

Predictive Maintenance

- Identifies, analyzes and implements predictive maintenance technologies and procedures
- Conducts vibration analysis, rotor-dynamic analysis, thermography, lubrication analysis, laser shaft alignment, electric motor testing, balancing, thermal growth monitoring, and failure analysis for root-cause evaluations

NPM020

Nuclear Plant Maintenance Planning

- Designs planned work and design change packages
- Defines procedures, drawings, equipment and materials required to perform planned work packages
- Develops work standards to support work packages
- Conducts field walk downs to identify and analyze corrective and preventative maintenance, modification and surveillance activities
- Acts as liaison with engineering department and/or vendors to coordinate activities

NPM030

Nuclear Plant Maintenance Scheduling

- Develops computerized critical-path schedules for day-to-day maintenance activities and for refueling and maintenance outages
- Prepares and analyzes daily work schedules to optimize equipment availability and manpower usage
- Publishes daily work schedules and monitors progress
- Documents schedule problems, maintains statistics, and performs trend analysis

NPM040

Nuclear Plant Maintenance Work Week

- Develops detailed aspects of online maintenance schedules and implements details of scheduled maintenance activities in order to increase efficiency and reliability of nuclear plant equipment
- Coordinates with site work groups to identify high-priority and work scope details such as resource needs, work sequences, logic ties, and work activity durations
- Performs NRC-mandated maintenance risk reviews for online scheduled work and forced outages
- Performs schedule impact analysis and provides feedback on risk significant impacts, manpower issues, schedule duration threats and opportunities, and "what if" scenarios
- Develops detailed schedule fragments for high-priority and risk-significant work activities
- Develops contingency plans for potential deficiencies that challenge scheduled plans, including advanced preparation of forced or short notice outage schedules

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code												
Nuclear Plant Maintenance (continued)	NPM												
Discipline													
<table> <tr> <td data-bbox="194 556 307 588">NPM050</td><td data-bbox="411 556 1600 836"> Nuclear Plant Maintenance Outage Management <ul style="list-style-type: none"> • Directs nuclear plant outage-related activities, including operations, maintenance and construction consistent with the organization's policy and regulatory requirements • May be partly or fully responsible for scheduling • Provides planning and scheduling support, coordinates cost estimates and procurement, and designs support plans prior to and during the outage • Monitors progress of outages, identifies problems, revises schedules and budgets, and reports on the status of the outage to management • Implements ALARA (as low as is reasonably achievable) programs, prepares outage-related documentation, and assesses the adequacy of planning documents and systems </td></tr> <tr> <td data-bbox="194 847 307 879">NPM060</td><td data-bbox="411 847 1600 1073"> Nuclear Plant Maintenance Instrument and Control <ul style="list-style-type: none"> • Maintains installed instrumentation, process control systems, and electrical protective devices • Conducts preventive and corrective maintenance in the nuclear core detection system and associated instrumentation, reactor control and protective system, control rod system, protective relaying, and other plant instrumentation • Reviews calibration and test data results with NRC and state compliance inspectors • Determines instrumentation and control irregularities for equipment associated with the reactors, turbines, generators and other associated equipment </td></tr> <tr> <td data-bbox="194 1084 307 1116">NPM070</td><td data-bbox="411 1084 1600 1246"> Nuclear Plant Maintenance Mechanical and/or Electrical <ul style="list-style-type: none"> • Inspects, repairs and rebuilds mechanical and/or electrical equipment and associated structures • Ensures compliance with industrial and radiation safety requirements • Analyzes equipment breakdowns, determines the proper corrective action, and directs repairs • Plans work schedules to accomplish required maintenance and, when required, assigns priorities • May establish welding guidelines and standards based on metallurgic and failure analyses </td></tr> <tr> <td data-bbox="194 1256 307 1289">NPM080</td><td data-bbox="411 1256 1600 1450"> Nuclear Plant Maintenance In-Service Inspection and Testing <ul style="list-style-type: none"> • Develops, implements and maintains in-service inspection (ISI), testing and maintenance programs • Supports and conducts nondestructive examination (NDE), quality engineering (QE), and quality control (QC) inspections • Researches, interprets and explains inspection results • Recommends changes to maintain compliance with regulatory requirements • Maintains documentation to meet licensing obligations and ensure proper test methodologies are in place </td></tr> <tr> <td data-bbox="194 1461 307 1494">NPM081</td><td data-bbox="411 1461 1600 1655"> Nuclear Plant Maintenance Non-Destructive Examination (NDE) Specialty <ul style="list-style-type: none"> • Develops, implements and maintains Non-Destructive Examination (NDE) requirements, testing and maintenance programs • Designs, installs, evaluates and updates NDE process systems, procedures and improvement techniques • Coordinates NDE training and certification programs • Develops, reviews and approves NDE reports, and responds to regulator questions on NDE applications • Ensures proper communication and interpretation of NDE test results and prompt repair of components </td></tr> <tr> <td data-bbox="194 1666 307 1698">NPM999</td><td data-bbox="411 1666 1600 1746"> Nuclear Plant Maintenance - 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Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Nuclear Plant Operations	NPO
Coordinates the operation of all nuclear power-generating equipment, including the nuclear reactor(s), reactor plant support systems (e.g., fuel handling, radioactive waste disposal), secondary plant systems and pumps, electrical breaker connections to the systems, main turbines, generators, and associated auxiliary equipment.	
Applicable Career Bands	
Discipline	
NPO000	Nuclear Plant Operations Generalist/Multidiscipline <ul style="list-style-type: none"> Operates nuclear reactor(s), turbine generator units and auxiliary equipment and related computer controls, and interfaces with transmission facilities Performs routine tests of the reactor safeguard equipment and radiation protection systems Conducts shutdown and start-up activities Removes units from service in the event of an emergency and implements established emergency procedures Maintains, reviews and evaluates all operating records to preserve documentation of all operations, activities and responses to any unusual conditions in accordance with NRC (Nuclear Regulatory Commission) specifications
NPO010	Nuclear Plant Operations - RO License <ul style="list-style-type: none"> Operates nuclear reactor(s), turbine generator units and auxiliary equipment and related computer controls, and interfaces with transmission facilities Performs routine tests of the reactor safeguard equipment and radiation protection systems Conducts shutdown and start-up activities Removes units from service in the event of an emergency and implements established emergency procedures Maintains, reviews and evaluates all operating records to preserve documentation of all operations, activities and responses to any unusual conditions in accordance with NRC (Nuclear Regulatory Commission) specifications Maintains a Reactor Operator (RO) license which usually requires three years of power plant experience with at least one year of experience at the nuclear power plant, completion of the nuclear power plant's Reactor Operator (RO) training program, and passing an NRC Reactor Operator exam
NPO020	Nuclear Plant Operations - SRO License <ul style="list-style-type: none"> Operates nuclear reactor(s), turbine generator units and auxiliary equipment and related computer controls, and interfaces with transmission facilities Performs routine tests of the reactor safeguard equipment and radiation protection systems Conducts shutdown and start-up activities Removes units from service in the event of an emergency and implements established emergency procedures Maintains, reviews and evaluates all operating records to preserve documentation of all operations, activities and responses to any unusual conditions in accordance with NRC (Nuclear Regulatory Commission) specifications Maintains a Senior Reactor Operator (SRO) license which usually requires three years of nuclear power plant experience, completion of the nuclear power plant's Senior Reactor Operator training program, and passing an NRC Senior Reactor Operator exam
NPO999	Nuclear Plant Operations - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Nuclear Plant Operations Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Nuclear Quality Assurance	NQA
Performs independent assessments of departments involved in nuclear safety, such as construction, design engineering, production and distribution, and selected other functions.	
Applicable Career Bands	
Discipline	
NQA000	Nuclear Quality Assurance Generalist/Multidiscipline <ul style="list-style-type: none"> • Prepares plans and schedules for conducting independent assessments and surveillance • Reviews documents, prepares checklists and agendas for assessments, performs independent assessments, conducts pre- and post-assessment interviews, and prepares final assessment report • Ensures and documents that corrective actions are taken based on report findings • Reviews organization's quality assurance manual and implementation procedures to verify compliance with American Society of Mechanical Engineers (ASME), American National Standards Institute (ANSI) and Nuclear Regulatory Commission (NRC) regulations • Maintains up-to-date knowledge and understanding of NRC revisions to regulations and industry codes and standards • Develops and implements nuclear quality assurance procedures to be followed in one or more of the following areas: design, procurement, construction and operation of nuclear generating stations • Reviews quality assurance specifications; test reports and other documentation to ensure that nuclear safety and quality assurance requirements are met • Inspects and reviews contractors' and vendors' work for compliance with quality assurance standards • May conduct assessments of vendor/contractor quality assurance/quality control programs to ensure compliance
NQA999	Nuclear Quality Assurance - No Applicable Discipline <ul style="list-style-type: none"> • Responsibilities are within the Nuclear Quality Assurance Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Nuclear Plant Radiation Safety	NRS
Directs radiation safety units in implementing decontamination, instrumentation, planning and scheduling, procedure, training, radiation control, and radwaste programs in support of operation and maintenance activities at the plant.	
Applicable Career Bands	
NRS000, NRS010, NRS020, NRS030, NRS999	
Discipline	
NRS000	Nuclear Plant Radiation Safety Generalist/Multidiscipline <ul style="list-style-type: none"> Ensures compliance with applicable regulatory requirements regarding radiation safety procedures Approves radiation work permits Certifies radioactive waste shipping manifests and administers the radiation safety training program Interfaces with management and regulators on matters related to implementation of radiation safety programs
NRS010	Nuclear Plant Health Physics <ul style="list-style-type: none"> Participates in the maintenance of ongoing plant radiation monitoring programs Conducts investigations, inspections, surveys and tests to ensure compliance with government regulations and organization guidelines on personal radiation exposure, radioactive effluent releases, and radioactive concentrations in plant systems and in the environment Interprets test results and performs exposure investigations Typically requires certification by the American Board of Health Physicists and a B.S. degree
NRS020	Radiochemical Control <ul style="list-style-type: none"> Conducts chemical and radiochemical sampling and analyses Manages water treatment for the reactor and auxiliary systems to ensure that operations are within prescribed limits Operates and maintains the make-up water, chemical and waste treatment systems
NRS030	Nuclear Plant Emergency Preparedness <ul style="list-style-type: none"> Develops, maintains and evaluates radiological emergency plans in compliance with government nuclear regulatory requirements Schedules and coordinates on-site and off-site nuclear plant emergency drills and exercises Ensures public health and safety regarding possible exposure to radiation by developing emergency evacuation plans and negotiating emergency support agreements with appropriate governmental agencies Develops public information scenarios for drills and exercises, and maintains an effective E-plan public information program May also be responsible for nuclear plant security
NRS999	Nuclear Plant Radiation Safety - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Nuclear Plant Radiation Safety Function but are not described in other Discipline summaries


Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Nuclear Plant Administrative Support Services	NSA
Develops, coordinates, implements and administers nontechnical nuclear plant support activities such as fitness for duty (FFD) program, document control, and facilities management.	
Applicable Career Bands	
<p>NSA000, NSA010, NSA020, NSA999</p>	
Discipline	
NSA000	Nuclear Plant Administrative Support Services Generalist/Multidiscipline <ul style="list-style-type: none"> Develops, coordinates, implements and administers two or more nontechnical nuclear plant support activities such as fitness for duty (FFD) program, document control, and facilities management
NSA010	Nuclear Plant Fitness for Duty Program/Access Control <ul style="list-style-type: none"> Develops, implements and conducts the organization's fitness for duty (FFD) program Ensures compliance with regulatory requirements Identifies problem areas and unusual problems and initiates procedures for resolution Develops comprehensive training and communication programs to ensure that employees and contractors are aware of FFD requirements Prepares, maintains and stores FFD records and statistical data Provides and presents data to management and regulatory agencies as required Oversees and provides support to testing activities Investigates testing programs with certified laboratories Works with Medical Department and employee assistance program (EAP) coordinators in the review of positive test results May be responsible for access control
NSA020	Nuclear Plant Operations Document Control <ul style="list-style-type: none"> Manages nuclear records management system (normally computerized), including document control, filing and records management, in accordance with regulatory requirements May maintain a micrographic facility, including microfilm and fiche, as well as other film-record files Establishes and maintains plant or site control files, including indexing, filing, retrieving and updating of all documents and prints, access control to classified materials, and quality assurance records
NSA999	Nuclear Plant Administrative Support Services - No Applicable Discipline <ul style="list-style-type: none"> Responsibilities are within the Nuclear Plant Administrative Support Services Function but are not described in other Discipline summaries

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Nuclear Plant Technical Support Services	NST
Develops, coordinates, implements and administers technical nuclear plant support activities and programs such as plant licensing, operations procedure writing, performance assessment, corrective action, and employee concerns.	
Applicable Career Bands	
	
Discipline	
NST000	Nuclear Plant Technical Support Services Generalist/Multidiscipline <ul style="list-style-type: none"> • Develops, coordinates, implements and administers two or more technical nuclear plant support activities or programs as a generalist or in a combination of Disciplines in the Nuclear Plant Technical Support Services Function such as plant licensing, operations procedure writing, performance assessment, corrective action and employee concerns • Most nuclear plant technical support services roles typically require a four-year college degree with knowledge of reactor systems design and function, technical specifications, and regulations
NST010	Nuclear Plant Licensing <ul style="list-style-type: none"> • Obtains and maintains the operating permits and licenses required by the NRC (Nuclear Regulatory Commission) and state or local governments for nuclear facilities • Provides licensing direction to the organization, vendor and consultant personnel to ensure that regulatory requirements relating to the design, construction and modification of existing facilities are met • Provides necessary interface with outside organizations and serves as the on-site liaison for NRC resident inspectors, and corresponds with the NRC regarding nuclear plant licensing issues • Works to identify, prioritize, and facilitate necessary station support and response to regulatory issues or required licensing initiatives • Implements commitment tracking activities associated with site-generated regulatory correspondence • Prepares licensing documents and reports, operation evaluations, and regulatory interpretations • Prepares nuclear safety and environment reports • Takes responsibility for generic and/or plant-specific licensing issues including preparation, review and updates to the FSAR (final safety analysis report)
NST015	New Nuclear Plant Licensing <ul style="list-style-type: none"> • Identifies, prepares and obtains regulatory approval for combined construction and operating licenses (COL), early site permits (ESP), and other permits required by the NRC (Nuclear Regulatory Commission) and state and/or local governments for the construction and operation of new nuclear plants • Prepares licensing documents including the preliminary safety analysis report (PSAR) and the final safety analysis report (FSAR), operation evaluations, and regulatory interpretations • Provides licensing direction to the organization, vendor and consultant personnel to ensure that regulatory requirements relating to the design and construction of new facilities are met • Provides necessary interface with outside organizations and serves as the liaison for NRC inspectors, and corresponds with the NRC regarding new nuclear plant licensing issues • Prepares nuclear safety and environment reports
NST017	New Nuclear Power Plant Environmental Affairs and Compliance <ul style="list-style-type: none"> • Develops and implements the organization's positions on environmental policy issues for new nuclear power plants regarding the impact of the organization's operations on water, air and land quality • Designs and implements programs for new nuclear power plants to comply with environmental regulations • Serves as a liaison with external government environmental agencies regarding new nuclear power plants • Monitors programs and maintains up-to-date records for new nuclear power plants required by environmental permits to ensure government compliance

Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Nuclear Plant Technical Support Services (continued)	NST
Discipline	
NST020 Nuclear Plant Operations Procedure Writing	
<ul style="list-style-type: none"> Creates, revises and reviews nuclear power plant operations procedures Reviews design and license changes for procedures impacting on the performance of NRC regulatory requirements Gathers documentation to prepare an analysis of recommended design and licensing changes Reviews documentation to ensure procedures are up-to-date and accurate Validates the technical basis of written procedures by reviewing the relevant technical, regulatory and licensing issues and interfacing with all applicable departments 	
NST030 Nuclear Plant Maintenance Procedure Writing	
<ul style="list-style-type: none"> Creates, revises and reviews nuclear power plant maintenance procedures Reviews design and license changes for procedures impacting on the performance of NRC regulatory requirements Gathers documentation to prepare an analysis of recommended design and licensing changes Reviews documentation to ensure procedures are up-to-date and accurate Validates the technical basis of written procedures by reviewing the relevant technical, regulatory and licensing issues and interfacing with all applicable departments 	
NST040 Nuclear Plant Performance Improvement	
<ul style="list-style-type: none"> Develops and implements nuclear power plant performance monitoring processes and procedures to ensure safe and efficient operation Recommends improvements in solving human performance issues and performance improvement processes Develops sustainable, repeatable and quantifiable human performance improvements Works with plant management to provide performance improvement services and ensure they are knowledgeable of improvement opportunities Works with corrective action personnel to provide assessment and investigation services Works with operations training personnel to ensure lessons learned are included in operations training Directs the development of reports as needed to ensure upper management is aware of plant performance conditions and improvement opportunities Tracks cost savings associated with performance successes and failures 	
NST050 Nuclear Plant Corrective Action	
<ul style="list-style-type: none"> Implements corrective action programs, instructional technology programs, and coordinates continuous performance improvement support programs Participates in and/or facilitates root cause analysis and self-assessment teams on corrective action cases Conducts test performance results monitoring and analysis of deviations from targets Collects and analyzes data to prepare corrective action status reports for management Monitors corrective action programs to determine proper action was taken Provides training on how to implement corrective actions 	
NST060 Nuclear Plant Employee Concerns	
<ul style="list-style-type: none"> Ensures that employees can bring valid concerns to management's attention in a constructive fashion, and maintains employee anonymity and confidentiality Evaluates, investigates, resolves and brings to closure employee concerns received from various sources including the NRC Typically also handles employee concern issues for contract employees 	
NST999 Nuclear Plant Technical Support Services - No Applicable Discipline	
<ul style="list-style-type: none"> Responsibilities are within the Nuclear Plant Technical Support Services Function but are not described in other Discipline summaries 	

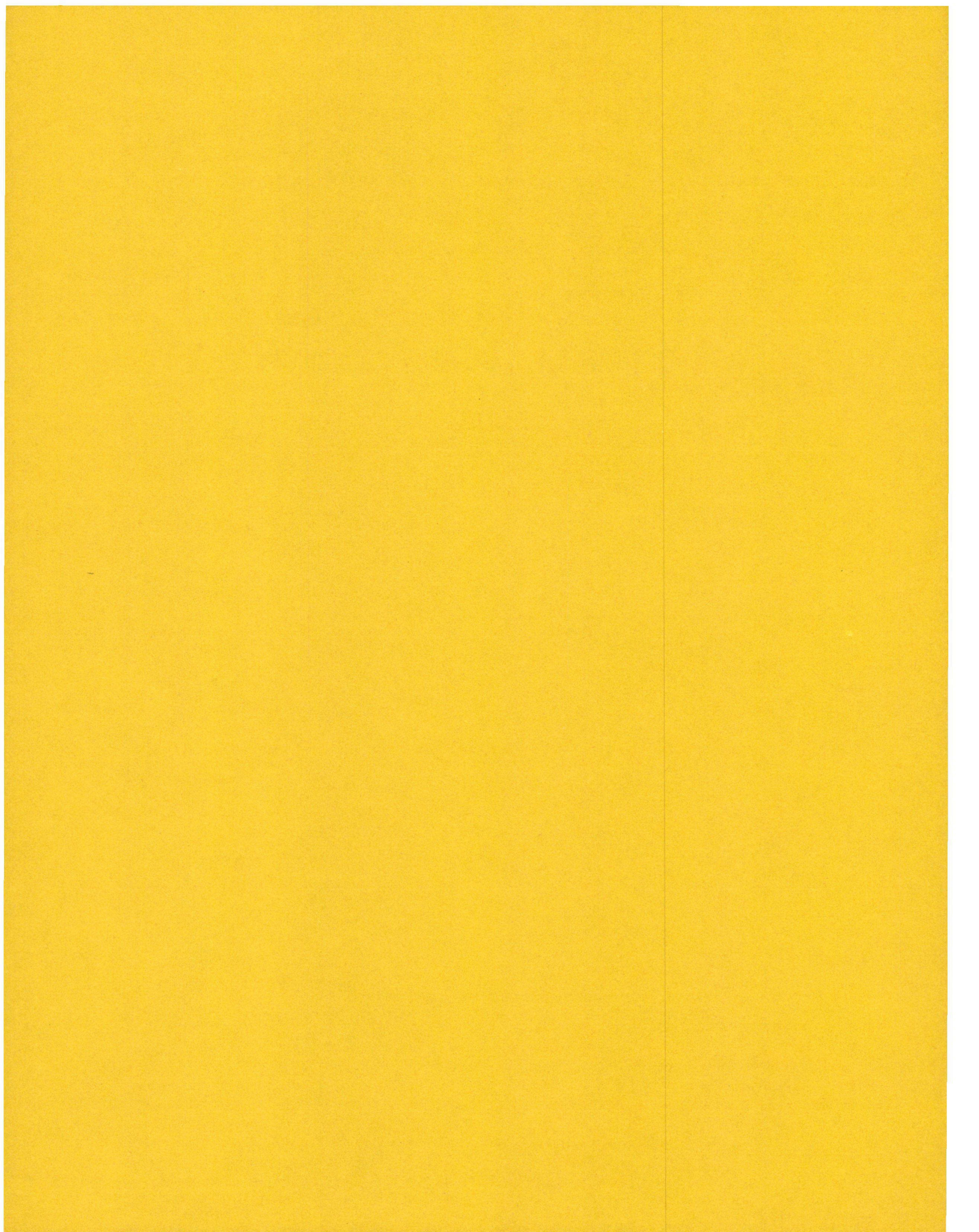
Career Bands, Career Levels, Functions and Disciplines

Functions and Disciplines Definitions (continued)

Function	Code
Nuclear Plant Training	NTR
Develops and implements nuclear and simulator, technical, and nuclear-operator training, retraining, and licensing programs, including radiological safety.	
Applicable Career Bands	
Discipline	
NTR000	Nuclear Plant Training Generalist/Multidiscipline <ul style="list-style-type: none"> • Conducts training courses for nuclear power plant employees • Develops and maintains training programs • Maintains training records and documentation for station personnel • Conducts needs/job task analyses
NTR010	Nuclear Operations Training - RO License <ul style="list-style-type: none"> • Conducts training programs for licensed operators and shift technical advisers in reactor operations covering replacement, requalification, upgrade, etc., consistent with NRC (Nuclear Regulatory Commission) requirements • Develops and maintains operations training programs • Administers training programs to ensure the availability of qualified and licensed personnel • Maintains a Reactor Operator (RO) license which usually requires three years of power plant experience with at least one year of experience at the nuclear power plant, completion of the nuclear power plant's Reactor Operator (RO) training program, and passing an NRC Reactor Operator exam
NTR014	Nuclear Operations Training - SRO License/Certificate <ul style="list-style-type: none"> • Conducts training programs for licensed operators and shift technical advisers in reactor operations covering replacement, requalification, upgrade, etc., consistent with NRC (Nuclear Regulatory Commission) requirements • Develops and maintains operations training programs • Administers training programs to ensure the availability of qualified and licensed personnel • Maintains a Senior Reactor Operator (SRO) license which usually requires three years of nuclear power plant experience, completion of the nuclear power plant's Senior Reactor Operator training program, and passing an NRC Senior Reactor Operator exam
NTR030	Nuclear Technical Training <ul style="list-style-type: none"> • Conducts training courses for plant employees in such technical specialties as health physics, plant chemistry, and maintenance (i.e., electrical, mechanical, instrument and control) that comply with applicable NRC regulations • Develops and maintains technical training programs • Conducts needs/job task analyses
NTR040	Nuclear Training Accreditation and Program Support <ul style="list-style-type: none"> • Obtains and maintains National Nuclear Accrediting Board accreditation for applicable training programs from the Institute of Nuclear Power Operations (INPO) • Provides guidance and support to training supervisors and staff to ensure compliance with Institute of Nuclear Power Operations (INPO) accreditation guidelines and Nuclear Regulatory Commission (NRC) regulations • Develops, maintains and implements the systematic approach to training (SAT) processes that support the analysis, design, development, implementation and evaluation of training • Develops, implements and manages performance indicators and metrics to track relevant training program data necessary to maintain training program accreditation by the National Nuclear Accrediting Board • Designs, develops, implements and manages instructor-training programs that ensure a competent instructional staff
NTR999	Nuclear Plant Training - No Applicable Discipline <ul style="list-style-type: none"> • Responsibilities are within the Nuclear Plant Training Function but are not described in other Discipline summaries

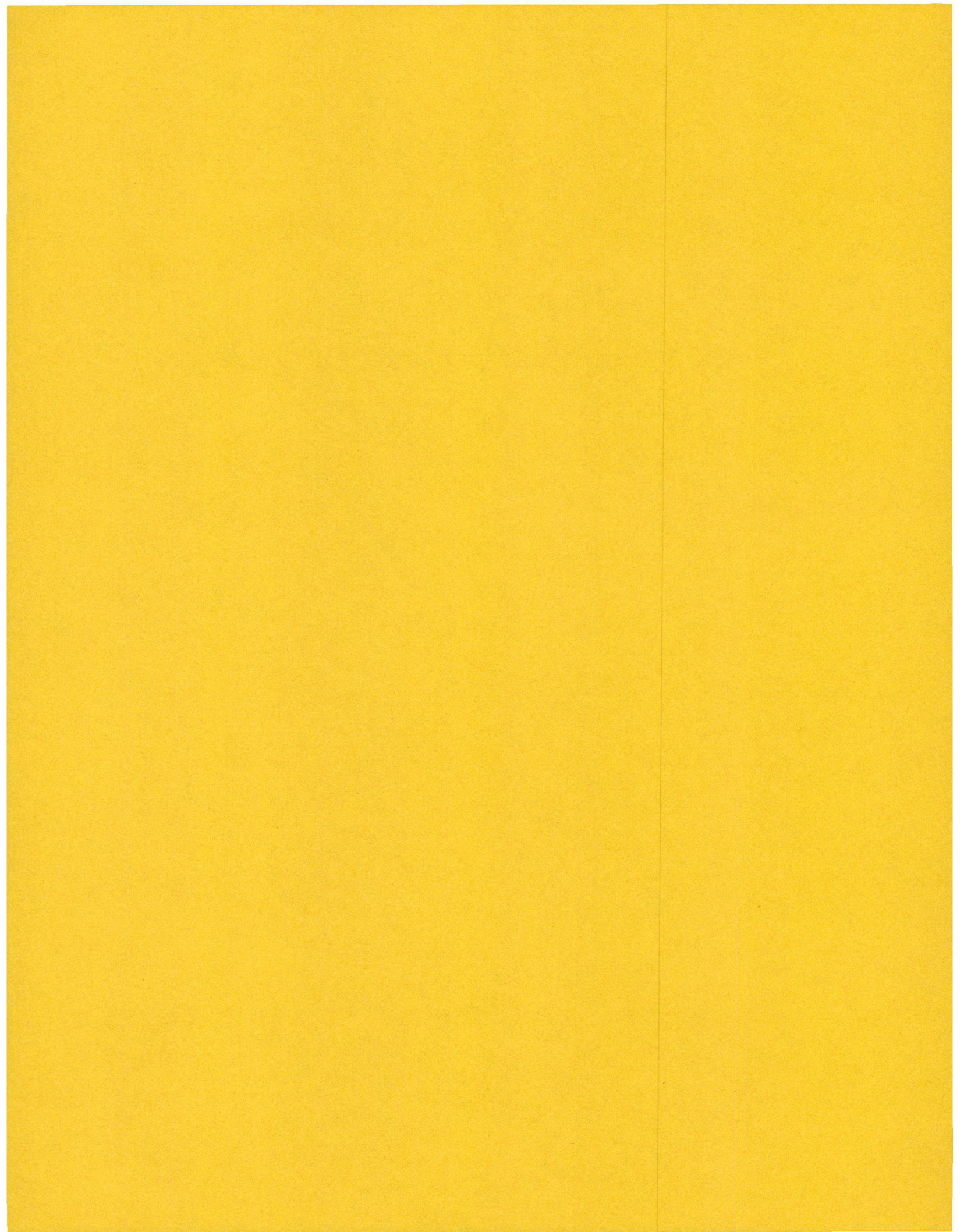
OPUC RFI 1-1_SL ADIT Calc 2017

1pp



2018-5-16 Liberty's Response to OPUC RFI 1-22

3pp



RESPONSE TO REQUEST FOR INFORMATION

OPUC RFI 1-22

Referencing Attachment CG-2, Table 3, please provide this Table populated with source data to reflect how the allocation factor specific to Liberty Silverleaf was developed for the test year.

RESPONSE:

Costs from Liberty Utilities Canada are allocated between APCO and Liberty Utilities in accordance with CAM Tables 4a and 4b. The Liberty Utilities portion is then allocated to the regulated utilities based on CAM Table 2 and, in turn, allocated by Liberty Utilities (Sub) Corp. using the four factor methodology. Liberty Utilities (Sub) Corp. records depreciation separately and then capitalizes 21% of the remaining costs to indirect overhead (INDOH) and 79% is allocated to the Arizona and Texas utilities based on a four factor methodology. Refer to Exhibit 1 in OPUC RFI 1-16 for the explanation of the four factor formula. Below is an example of how costs are allocated to Liberty Arizona and Texas.

Exhibit 2

Weight	(a) 25% Utility Plant	(b)	(c) 25% Customers	(d)	(e) 25% Expenses	(f)	(g) 25% Labor	(h)	(i) 100% Total	(j) Four Factor
8100 Black Mountain	\$6,662,040.4	3.42%	2,445	3.06%	\$1,229,776.8	4.33%	\$422,491.3	4.19%	15.00%	3.75%
8200 Gold Canyon	\$12,064,297.1	6.19%	6,915	8.66%	\$2,245,972.8	7.91%	\$753,079.4	7.47%	30.23%	7.56%
8600 LPSCO Water	\$36,431,344.5	28.97%	19,141	23.98%	\$7,084,833.8	24.94%	\$2,509,359.9	24.89%	102.78%	25.69%
8600 LPSCO Sewer	\$33,426,332.4	27.43%	22,006	27.57%	\$3,664,301.4	19.84%	\$2,167,649.8	21.50%	96.43%	24.11%
8134 Rio Water	\$13,655,781.1	7.01%	6,978	8.74%	\$1,862,197.0	6.58%	\$825,525.5	8.19%	30.49%	7.62%
8134 Rio Sewer	\$5,349,626.0	2.75%	2,266	2.84%	\$681,957.9	2.40%	\$177,836.6	1.76%	9.73%	2.44%
8137 North	\$1,921,680.0	0.99%	363	0.45%	\$211,370.1	0.74%	\$60,720.4	0.60%	2.79%	0.70%
8140 South	\$2,053,139.0	1.05%	882	1.10%	\$397,518.4	1.03%	\$87,342.2	0.87%	4.07%	1.02%
8500 Bella Vista	\$13,854,463.5	8.14%	9,502	11.90%	\$3,162,362.3	11.13%	\$1,148,022.4	11.38%	42.56%	10.64%
8110 Holly Water	\$2,463,886.0	1.26%	1,986	2.49%	\$659,874.7	2.22%	\$311,338.5	3.09%	9.06%	2.27%
8110 Holly Sewer	\$320,668.3	0.17%	122	0.19%	\$129,656.0	0.46%	\$63,692.1	0.63%	1.45%	0.36%
8112 Big Water	\$2,310,784.6	1.19%	640	0.80%	\$386,591.4	1.36%	\$186,003.0	1.84%	5.19%	1.30%
8112 Big Sewer	\$1,624,965.3	0.83%	361	0.45%	\$400,886.1	1.41%	\$167,009.1	1.60%	4.35%	1.09%
8114 Piney Water	\$1,306,867.9	0.67%	274	0.34%	\$133,468.0	0.47%	\$37,273.2	0.37%	1.85%	0.46%
8114 Piney Sewer	\$434,046.1	0.22%	269	0.34%	\$234,267.2	0.79%	\$24,277.3	0.23%	1.58%	0.40%
8116 Hill Water	\$1,195,717.4	0.61%	225	0.28%	\$175,230.6	0.62%	\$39,177.8	0.39%	1.90%	0.48%
8116 Hill Sewer	\$2,020,444.2	1.04%	407	0.51%	\$501,450.5	1.77%	\$61,143.7	0.61%	3.92%	0.98%
8300 Tall Timbers	\$4,111,402.6	2.11%	2,359	2.96%	\$1,468,744.2	5.17%	\$440,120.4	4.36%	14.60%	3.65%
8400 Wood Mack	\$7,603,940.6	3.90%	1,999	2.50%	\$1,757,113.6	6.19%	\$334,056.7	3.30%	17.89%	4.47%
8143 Entrada	\$2,904,443.0	1.52%	719	0.92%	\$345,474.1	1.16%	\$73,714.7	0.73%	1.65%	0.41%
8146 Galveston Water	\$1,102,758.7	0.57%	156	0.20%	\$101,973.8	0.36%	\$19,417.4	0.19%	1.31%	0.33%
8146 Galveston Sewer	\$451,015.9	0.44%	156	0.20%	\$101,514.4	0.36%	\$13,877.0	0.14%	1.13%	0.28%
Total	\$194,780,699.7	100.00%	79,821	100.00%	\$28,407,158.8	100.00%	\$10,084,425.3	100.00%	400.00%	100.00%
	\$0.0	0.00%	0	0.00%	\$0.0	0.00%	\$0.0	0.00%	0.00%	0.00%
Total GSWC	\$194,780,699.7	100.00%	79,821	100.00%	\$28,407,158.8	100.00%	\$10,084,425.3	100.00%	400.00%	100.00%

Prepared by: Leticia Washington, Manager, Rates and Regulatory Affairs

Sponsored by: Gaetana Girardi, Director – Regulatory Strategy

Liberty Utilities (Silverleaf) Corp									
Liberty Utilities Canada_Admin Allocations									
TY 2017									
	Total Corp CAD (\$)	Total Corp in US(\$)	Total Removed CAD(\$)	Total Removed in US\$	Total Adjusted Allocations US (\$)	LW 8020 Portion*	LW 8020 Allocations	Rate application for Litchfield Park Water and Sewer (WTR)	Rate application for Litchfield Park Water and
LUCC Corporate Allocation		\$ 8,157,555.41		\$ 823,013.03	\$ 7,334,542.39		\$ 363,257.36	\$ 83,100.74	\$ 91,315.75
Original LUCC Allocation to all Companies	Allocation % **	Total (Original)	Total (Adjusted)						
Liberty Water		602,388.37	542,246.26						
Calpeco		486,931.20	435,773.46						
Granite State		443,860.87	398,164.09						
Energy North		873,261.00	783,715.39						
Midstates Gas		599,000.43	537,728.46						
Midstates Water		29,794.91	27,082.23						
Woodson-Hensley		2,271.95	1,922.76						
Arkansas		142,796.47	128,473.30						
Georgia		469,393.89	421,218.58						
New England Gas		523,105.85	468,605.42						
Whitehall - Water		15,501.09	13,910.60						
Whitehall - Sewer		15,494.59	13,873.13						
Park Water		591,483.95	546,183.95						
Empire		3,362,270.84	3,015,644.77						
		8,157,555.41	7,334,542.39						
** Please refer to Summary by month tab to see the full year break down		-	-						

2018-5-16 Liberty's Response to OPUC RFI 1-23

5pp

RESPONSE TO REQUEST FOR INFORMATION

OPUC RFI 1-23 Referencing Attachment GC-2, Table 4a, please provide the total cost incurred by LUC Business Services in the test year for Information Technology; Human Resources; Training; Facilities and Building Rent; Environmental, Health, Safety, and Security; Procurement; Executive and Strategic Management; Technical Services; and Utility Planning. Please provide the direct costs for each of the above assigned to Liberty Silverleaf. To the extent such costs are allocated, please demonstrate the development of the allocation methodology used to allocate these costs to Liberty Silverleaf, including the source data used to develop the allocation methodology.

RESPONSE: The total cost allocated by LUC-LABS Business services in 2017 to Liberty Silverleaf is \$22,879. Refer to Schedules below to view full break down of cost.

Prepared by: Leticia Washington, Manager, Rates and Regulatory Affairs

Sponsored by: Gaetana Girardi, Director – Regulatory Strategy

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Liberty Utilities Canada Liberty Algonquin Business Services													
	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Total
LUCS LABS Total Cost Pool CAD	\$ 1,494,775.13	\$ 801,221.91	\$ 1,898,257.05	\$ 1,903,619.44	\$ 329,441.93	\$ 2,060,892.34	\$ 2,749,026.96	\$ 1,313,405.20	\$ 1,543,294.51	\$ 1,140,645.05	\$ 1,521,634.88	\$ 2,115,578.28	\$ 16,867,792.68
APCO	\$ 203,392.81	\$ 96,944.03	\$ 260,236.97	\$ 250,030.72	\$ 297,686.96	\$ 100,239.35	\$ 174,566.89	\$ 217,948.16	\$ 143,183.32	\$ 245,436.17	\$ 331,318.50	\$ 2,333,381.26	\$ 2,333,381.26
LUCS	\$ 1,291,382.32	\$ 704,275.88	\$ 1,638,020.08	\$ 1,653,588.72	\$ 316,546.35	\$ 1,763,205.37	\$ 564,787.61	\$ 1,138,838.31	\$ 1,325,945.95	\$ 897,461.73	\$ 1,170,299.72	\$ 1,780,759.78	\$ 14,534,411.41
LW B020	\$ 98,015.93	\$ 53,454.53	\$ 124,325.70	\$ 118,727.66	\$ 22,735.18	\$ 126,598.18	\$ 47,878.48	\$ 84,042.66	\$ 97,850.64	\$ 73,609.50	\$ 94,644.67	\$ 131,377.52	\$ 1,072,780.66
LUSS Conversion	1 133555	1 310905	1 310985	1 13386	1 1344	1 13607	1 13298	1 12689	1 12605	1 12283	1 12605	1 12769	
Total Cost Pool USD	\$ 1,120,886.59	\$ 607,404.81	\$ 1,447,857.48	\$ 1,422,097.30	\$ 245,120.48	\$ 1,514,582.45	\$ 563,262.87	\$ 1,035,073.84	\$ 1,224,351.06	\$ 928,637.18	\$ 1,207,167.70	\$ 1,553,675.53	\$ 12,970,217.28
APCO	\$ 152,518.11	\$ 73,494.60	\$ 198,504.23	\$ 185,785.24	\$ 9,520.37	\$ 218,774.87	\$ 75,379.27	\$ 137,573.40	\$ 172,430.32	\$ 116,570.32	\$ 194,872.01	\$ 259,470.98	\$ 1,795,893.52
LUCS	\$ 968,368.48	\$ 533,910.20	\$ 1,249,453.24	\$ 1,235,312.05	\$ 235,601.11	\$ 1,295,807.58	\$ 487,883.60	\$ 887,500.44	\$ 1,051,930.94	\$ 812,066.86	\$ 1,012,295.08	\$ 1,394,204.54	\$ 11,774,323.75
LW B020	\$ 73,499.18	\$ 40,523.78	\$ 94,833.48	\$ 88,695.40	\$ 16,916.06	\$ 93,039.01	\$ 36,004.27	\$ 66,232.69	\$ 77,628.43	\$ 59,927.95	\$ 74,704.22	\$ 101,099.87	\$ 823,104.44
												\$ 7,745.30	"variance from our books to actual summary"
LABS BUS and LABS Corp Combined													
LW B020	\$ 73,499.18	\$ 40,523.78	\$ 94,833.48	\$ 88,695.40	\$ 16,916.06	\$ 93,039.01	\$ 36,004.27	\$ 66,232.69	\$ 77,628.43	\$ 59,927.95	\$ 74,704.22	\$ 93,354.87	\$ 815,359.34
Depreciation	\$ 1,390.21	\$ 1,651.51	\$ 32,968.43	\$ 1,459.48	\$ 1,580.07	\$ 1,459.48	\$ 1,250.00	\$ 1,424.38	\$ 1,433.87	\$ 1,471.46	\$ 1,433.87	\$ 1,415.45	\$ 49,039.40
INDOH	\$ 15,142.89	\$ 8,163.18	\$ 12,997.50	\$ 17,843.66	\$ 3,220.56	\$ 19,210.46	\$ 7,298.41	\$ 13,609.74	\$ 16,000.86	\$ 12,275.87	\$ 15,386.77	\$ 11,776.20	\$ 152,921.10
Expense	\$ 56,966.08	\$ 30,709.09	\$ 48,872.55	\$ 69,392.26	\$ 12,115.43	\$ 72,267.88	\$ 27,455.86	\$ 51,198.57	\$ 60,193.70	\$ 46,180.62	\$ 57,883.58	\$ 80,163.22	\$ 613,398.84
Addtl Costs Bill to Exp Reg Companies	0 206028013	0 201441721	0 137003303	0 201179092	0 190384759	0 206477476	0 202709568	0 205483727	0 206121134	0 204843817	0 205969221	0 126144664	
LUCC Allocation to all Companies (US \$)													
Liberty Water	\$ 73,499.18	\$ 40,523.78	\$ 94,833.48	\$ 88,695.40	\$ 16,916.06	\$ 93,039.01	\$ 36,004.27	\$ 66,232.69	\$ 77,628.43	\$ 59,927.95	\$ 74,704.22	\$ 102,887.87	\$ 824,892.94
Calpine	\$ 53,841.29	\$ 29,685.40	\$ 68,464.58	\$ 74,385.79	\$ 14,507.82	\$ 50,041.15	\$ 15,489.25	\$ 28,985.92	\$ 35,415.15	\$ 26,938.70	\$ 34,718.41	\$ 46,634.34	\$ 669,235.70
Granite State	\$ 51,129.85	\$ 28,180.46	\$ 65,971.12	\$ 66,850.39	\$ 12,745.95	\$ 70,103.19	\$ 23,107.37	\$ 48,856.93	\$ 58,435.13	\$ 45,511.01	\$ 56,233.90	\$ 77,449.29	\$ 609,159.58
Energy North	\$ 101,388.18	\$ 55,900.43	\$ 130,817.76	\$ 131,190.14	\$ 25,020.74	\$ 137,614.77	\$ 53,161.05	\$ 97,794.02	\$ 114,620.07	\$ 88,484.95	\$ 110,302.98	\$ 151,194.20	\$ 1,198,210.65
Midstates Gas	\$ 69,916.21	\$ 38,548.30	\$ 90,210.55	\$ 89,683.67	\$ 10,428.58	\$ 94,075.62	\$ 36,421.21	\$ 66,999.65	\$ 78,527.37	\$ 60,621.93	\$ 75,569.29	\$ 104,079.31	\$ 821,757.69
Midstates Water	\$ 4,260.83	\$ 2,349.21	\$ 5,497.59	\$ 5,477.59	\$ 17,777.49	\$ 5,476.17	\$ 51,676.08	\$ 53,083.29	\$ 52,789.61	\$ 53,477.67	\$ 54,789.69	\$ 54,789.69	\$ 40,668.18
Arkansas	\$ 17,236.36	\$ 9,503.61	\$ 22,240.26	\$ 21,123.82	\$ 4,028.76	\$ 22,158.31	\$ 58,558.86	\$ 15,744.65	\$ 11,453.61	\$ 14,245.90	\$ 17,758.47	\$ 24,458.19	\$ 195,511.40
Woodson-Hensley				\$ 494.12	\$ 94.24	\$ 551.33	\$ 212.81	\$ 536.28	\$ 594.35	\$ 504.27	\$ 539.28	\$ 552.39	\$ 3,225.87
Georgia	\$ 54,422.31	\$ 30,006.74	\$ 70,219.27	\$ 70,536.33	\$ 73,385.33	\$ 57,007.82	\$ 58,586.14	\$ 52,405.14	\$ 60,456.19	\$ 47,547.63	\$ 59,939.62	\$ 64,718.41	\$ 644,334.34
New England Gas	\$ 54,876.81	\$ 32,461.74	\$ 75,966.72	\$ 74,930.55	\$ 15,149.09	\$ 83,302.62	\$ 32,211.34	\$ 58,455.32	\$ 68,450.54	\$ 53,634.77	\$ 66,834.39	\$ 92,049.00	\$ 718,820.69
Whitehall - Water	\$ 1,839.89	\$ 1,014.42	\$ 2,373.96	\$ 2,347.08	\$ 447.64	\$ 2,462.01	\$ 9,941.80	\$ 17,732.54	\$ 20,030.65	\$ 15,847.63	\$ 15,954.17	\$ 26,691.43	\$ 21,403.22
Whitehall - Sewer	\$ 1,743.05	\$ 961.03	\$ 2,249.02	\$ 2,347.08	\$ 447.64	\$ 2,462.01	\$ 9,958.81	\$ 17,763.79	\$ 20,067.24	\$ 15,995.88	\$ 19,989.37	\$ 22,739.80	\$ 21,324.82
Park Water	\$ 94,028.58	\$ 51,842.69	\$ 121,321.90	\$ 118,694.61	\$ 96,972.01	\$ 101,720.90	\$ 26,468.81	\$ 54,691.46	\$ 57,069.13	\$ 54,056.50	\$ 54,919.36	\$ 75,638.81	\$ 791,224.76
Empire	\$ 386,188.57	\$ 212,923.40	\$ 498,281.94	\$ 507,219.12	\$ 96,737.42	\$ 532,058.59	\$ 205,435.85	\$ 377,915.45	\$ 442,938.14	\$ 341,941.47	\$ 461,205.40	\$ 4,614,955.07	\$ 37,423,805.85
	\$ 968,368.51	\$ 533,910.19	\$ 1,249,453.15	\$ 1,235,312.04	\$ 235,600.94	\$ 1,295,807.57	\$ 487,883.69	\$ 887,500.45	\$ 1,051,930.95	\$ 812,066.90	\$ 1,012,295.05	\$ 1,394,204.57	\$ 11,774,323.85
	\$ 0.03	\$ (0.01)	\$ (0.09)	\$ (0.01)	\$ 0.03	\$ (0.01)	\$ 0.09	\$ 0.02	\$ 0.04	\$ 0.04	\$ (0.03)	\$ 0.03	\$ 0.10
Total Cost Pool - Original US\$													
Allocations %	7.59%	7.50%	7.59%	7.18%	7.18%	7.18%	7.38%	7.38%	7.38%	7.38%	7.38%	7.38%	
Corporate (S800)	\$ 310,837.08	\$ 170,273.31	\$ 324,866.26	\$ 290,167.79	\$ 218,990.69	\$ 301,854.80	\$ 224,620.94	\$ 338,022.41	\$ 333,683.30	\$ 265,027.43	\$ 307,808.45	\$ 316,705.12	\$ 3,352,967.58
Transition (S801)	\$ 76,991.40	\$ 67,765.01	\$ 98,503.36	\$ 86,615.25	\$ (27,441.66)	\$ 583,510.34	\$ (516,231.34)	\$ 338,266.81	\$ 539,157.75	\$ 539,806.91	\$ (524,415.15)	\$ 255,511.73	\$ 487,477.91
HR (S810)	\$ 35,217.00	\$ 11,749.00	\$ 58,175.53	\$ 43,334.24	\$ 46,747.65	\$ 49,171.24	\$ 569,961.99	\$ 59,680.84	\$ 563,266.72	\$ (511,124.00)	\$ 320,325.11	\$ 485,802.30	
Payroll (S811)	\$ 70,124.05	\$ 48,114.42	\$ 108,202.71	\$ 139,064.87	\$ 61,129.87	\$ 139,064.87	\$ 248,553.29	\$ 512,818.21	\$ 514,828.21	\$ 514,828.21	\$ 508,215.82	\$ 1,198,885.50	
EA0 (S813)	\$ 34,585.52	\$ 23,652.98	\$ 69,336.93	\$ (4,560.41)	\$ 33,969.20	\$ (5,672.19)	\$ 331,859.20	\$ 426,343.49	\$ 528,226.56	\$ 56,552.24	\$ 107,523.53	\$ 379,769.39	
CH&S (S815)	\$ 58,188.15	\$ 20,888.86	\$ 69,342.82	\$ 56,897.98	\$ 21,936.76	\$ 55,212.42	\$ 133,043.16	\$ 548,519.21	\$ 551,478.91	\$ 552,404.89	\$ 572,478.16	\$ 527,172.72	\$ 545,564.03
Purchasing (S825)	\$ 8,567.25	\$ 26,813.70	\$ 28,285.16	\$ 27,438.27	\$ 11,765.54	\$ 36,059.69	\$ 9,198.68	\$ 325,821.30	\$ 220,177.87	\$ 519,122.45	\$ 1,391.48	\$ 73,707.32	\$ 288,898.73
Facilities (S826)	\$ 19,106.22	\$ 17,975.35	\$ 21,467.49	\$ 28,018.38	\$ 20,435.04	\$ 13,037.16	\$ 25,675.12	\$ 23,076.88	\$ 514,132.85	\$ 514,810.01	\$ 28,064.57	\$ 33,828.07	\$ 259,627.14
Executive (S860)	\$ 53,806.82	\$ 31,794.73	\$ 137,320.00	\$ 76,907.31	\$ 18,511.06	\$ 171,966.17	\$ 97,461.85	\$ 54,105.97	\$ 86,409.59	\$ 54,958.66	\$ 104,180.13	\$ 95,331.41	\$ 95,331.41
Finance (S920)	\$ 17,617.67	\$ 29,957.00	\$ 25,338.95	\$ 26,413.93	\$ (88,606.11)	\$ 22,977.28	\$ (2,426.23)	\$ 153,227.41	\$ 512,375.41	\$ 573,547.60	\$ (111,327.53)	\$ 201,408.43	\$ 1,302,701.73
Risk (S921)	\$ 24,529.36	\$ 21,101.05	\$ 45,644.20	\$ 45,644.20	\$ 17,080.00	\$ 45,644.20	\$ 15,885.43	\$ 53,833.46	\$ 51,548.88	\$ 53,833.46	\$ 51,548.88	\$ 53,833.46	\$ 51,548.88
Treasury (S922)	\$ 50,293.75	\$ 23,012.00	\$ 60,556.92	\$ 51,473.94	\$ 23,076.53	\$ (3,080.26)	\$ 1,371.75	\$ 13,385.71	\$ 543,590.13	\$ 533,188.38	\$ 62,008.06	\$ 608,512.67	
Legal (S923)	\$ 34,657.09	\$ 53,558.22	\$ 46,615.93	\$ 33,362.80	\$ 872.68	\$ 56,572.97	\$ 10,253.42	\$ 50,746.23	\$ 51,377.85	\$ 51,151.20	\$ 58,202.38	\$ 583,523.20	\$ 367,343.98
Internal Audit (S924)	\$ 42,118.31	\$ 33,031.70	\$ (34,259.36)	\$ 142,337.49	\$ 20,214.92	\$ 88,414.16	\$ 24,464.42	\$ 50,324.66	\$ 44,703.09	\$ 50,239.48	\$ 54,878.75	\$ 143,169.75	\$ 646,737.36
F&A (S927)	\$ 83,784.27	\$ 27,835.73	\$ 92,530.31	\$ 107,966.00	\$ (17,283.76)	\$ 102,663.92	\$ 521,444.92	\$ 75,912.44	\$ 56,815.57	\$ 70,656.75	\$ 53,818.07	\$ 568,704.36	\$ 4,964,838.58
Compliance (S928)	\$ 15,267.39	\$ (30,641.85)	\$ 15,113.84	\$ 55,737.51	\$ (49,129.79)	\$ 49,245.09	\$ (20,321.63)	\$ 58,784.10	\$ 568,594.04	\$ (7,976.65)	\$ 679,323.82	\$ 84,553.43	\$ 888,465.51
Communications (S970)	\$ 20,128.85	\$ 1,320.36	\$ 51,895.42	\$ 13,728.78	\$ (6,259.75)	\$ 6,894.28	\$ 5,733.19	\$ 127,657.52	\$ 227,088.54	\$ 133,490.02	\$ 15,513.17	\$ 20,052.78	\$ 252,820.16
Total	\$ 1,120,886.59	\$ 607,404.81	\$ 1,447,857.48	\$ 1,422,097.30	\$ 245,120.48	\$ 1,514,582.45	\$ 563,262.87	\$ 1,035,073.84	\$ 1,224,351.06	\$ 928,637.18	\$ 1,207,167.70	\$ 1,553,675.53	\$ 12,970,217.28
	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$ (50.00)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$ (50.00)
LUC Portion - Original US\$													
Corporate (S800)	\$ 284,946.50	\$ 156,090.72	\$ 297,807.14	\$ 272,833.96	\$ 202,514.46	\$ 279,144.11	\$ 207,421.40	\$ 284,436.71	\$ 289,673.37	\$ 244,733.91	\$ 284,331.47	\$ 292,454.57	\$ 3,096,288.32
Transition (S801)	\$ 70,578.55	\$ 62,120.85	\$ 90,298.71	\$ 81,441.10	\$ (25,006.94)	\$ 77,227.26	\$ (14,990.24)	\$ 35,336.67	\$ 36,159.38	\$ 36,814.24	\$ (23,488.59)	\$ 23,558.27	\$ 450,049.35
HR (S810)	\$ 32,480.76	\$ 10,830.15	\$ 53,655.49	\$ 41,092.37	\$ 43,599.60	\$ 45,781.63	\$ 63,578.24	\$ 36,904.96	\$ 44,201.08	\$ 60,691.81	\$ (10,549.72)	\$ 28,199.45	\$ 450,471.83
Payroll (S811)	\$ 64,672.89	\$ 42,743.92	\$ 100,718.00	\$ 132,063.03	\$ 54,195.91	\$ 113,222.41	\$ 15,435.45	\$ 117,616.81	\$ 118,914.50	\$ 106,770.50	\$ 85,941.97	\$ 91,433.61	\$ 1,115,565.86
EA0 (S813)	\$ 35,547.56	\$ 23,018.26	\$ 63,949.69	\$ 33,626.05	\$ (4,246.04)	\$ 29,265.41	\$ (6,204.50)	\$ 12,512.32	\$ 21,466.59	\$ 20,266.59	\$ 4,892.91	\$ 31,524.79	\$ 352,754.90
CH&S (S815)	\$ 53,467.13	\$ 19,265.87	\$ 62,855.67	\$ 53,855.67	\$ 23,855.64	\$ 53,855.67	\$ 12,138.80	\$ 54,444.34	\$ 45,118.22	\$ 48,731.54	\$ 51,679.76	\$ 59,286.79	\$ 507,327.02
Purchasing (S825)	\$ 7,402.60	\$ 23,168.58	\$ 24,440.01	\$ 21,877.92	\$ 9,381.26	\$ 28,752.21	\$ 7,217.36	\$ 20,540.32	\$ 16,651.08	\$ 15,211.52	\$ 9,499.21	\$ 58,832.67	\$ 242,274.73
Facilities (S826)	\$ 12,206.75	\$ 11,484.25	\$ 13,7										

OPUC RFI 1-23 TY17 LABS Admin

2018-5-16 Liberty's Response to OPUC RFI 1-24

5pp

RESPONSE TO REQUEST FOR INFORMATION

OPUC RFI 1-24 1-24. Referencing Attachment CG-2, Table 4b, please provide the total cost incurred by LUC Corporate Services in the test year for Risk Management; Financial Reporting, Planning, and Administration; Treasury; Internal Audit; External Communications; Legal Costs; and Compliance. Please provide the direct costs for each of the above assigned to Liberty Silverleaf. To the extent such costs are allocated, please demonstrate the development of the allocation methodology used to allocate these costs to Liberty Silverleaf, including the source data used to develop the allocation methodology.

RESPONSE: The total cost incurred by LUC-LABS Corporate Services in 2017 to Liberty Silverleaf is \$23,758. Refer to schedules below.

Prepared by: Leticia Washington, Manager, Rates and Regulatory Affairs

Sponsored by: Gaetana Girardi, Director – Regulatory Strategy

Liberty Utilities (Silverleaf) Corp
Liberty Utilities Canada
Liberty Algonquin Business Services

Liberty All-equity Business Services	Water												Sewer																												
	Total Removed in US\$			Total Adjusted All-equity US (\$)			LW 2020 Partings*			LW 2020 All-equity			Rate application for Silverleaf (Healthy Ranch (WTR))			Rate application for Silverleaf (Big Eds (WTR))			Rate application for Silverleaf (Piney Shores (WTR))			Rate application for Silverleaf (DHS Country (WTR))			Rate application for Silverleaf (Consolidated (WTR))			Rate application for Silverleaf (Healthy Ranch (SWR))			Rate application for Silverleaf (Big Eds (SWR))			Rate application for Silverleaf (Piney Shores (SWR))			Rate application for Silverleaf (DHS Country (SWR))			Rate application for Silverleaf (Consolidated (SWR))	
LAES Corporate Allocation	Total Corp CAD (\$)	Total Corp in US(\$)	Total Removed CAD (\$)	Total Removed in US\$	Total Adjusted All-equity US (\$)	LW 2020 Partings*	LW 2020 All-equity	Rate application for Silverleaf (Healthy Ranch (WTR))	Rate application for Silverleaf (Big Eds (WTR))	Rate application for Silverleaf (Piney Shores (WTR))	Rate application for Silverleaf (DHS Country (WTR))	Rate application for Silverleaf (Consolidated (WTR))	Rate application for Silverleaf (Healthy Ranch (SWR))	Rate application for Silverleaf (Big Eds (SWR))	Rate application for Silverleaf (Piney Shores (SWR))	Rate application for Silverleaf (DHS Country (SWR))	Rate application for Silverleaf (Consolidated (SWR))																								
	\$ 16,867,782.64	\$ 12,970,217.28	\$ 11,925.38	\$ 9,146.64	\$ 12,961,070.64		\$ 823,104.44	\$ 513,063.47	\$ 7,399.75	\$ 3,466.20	\$ 8,053.83	\$ 26,983.23	\$ 52,200.99	\$ 7,183.31	\$ 2,404.87	\$ 7,106.08	\$ 18,895.25																								

LAES allocation to 2017 % Allocations without bonus by Expense Type

Total Cost Pool	Original US\$	APCO % Allocation*	APCO Partion	LUC % Allocation*	LUC Partion
IT (19800)	\$ 3 352 967.58		256 579.27	\$ 3 096 388.32	
Taxation (19801)	5487 477.91		37 428.35	\$ 450 049.55	
HR (19810)	5485 902.30		35 430.87	\$ 450 471.43	
Payroll (19811)	51 198 685.50		83 319.54	\$ 1 115 565.96	
Training (19812)	5539 789.59		27 014.52	\$ 552 156.86	
Off&B (19813)	5545 564.03		38 236.56	\$ 507 327.47	
Purchasing (19825)	5298 898.73		56 624.00	\$ 242 274.73	
Facilities (19826)	5259 827.14		75,500.22	\$ 180 106.92	
Finance (19860)	5945 331.43		199 451.52	\$ 745 878.89	
Finance (19820)	51 302 701.63		273 438.45	\$ 1 029,263.18	
Risk (19821)	5514 348.58		108 968.02	\$ 405,380.57	
Treasury (19822)	5386,512.67		75 401.11	\$ 293 111.56	
Legal (19823)	5367 343.98		64,886.21	\$ 302 457.77	
Internal Audit (19824)	5646 737.56		117 339.06	\$ 529 398.50	
R&A (19827)	5994 838.58		146 224.16	\$ 548 614.43	
Compliance (19828)	5868 465.51		176 979.14	\$ 691 486.57	
Communications (19829)	5332 822.16		20,145.95	\$ 232,678.21	
Total	512,970,217.28		1,797,006.75	511,173,210.53	
	\$12,970,217.28		1,795 893.52	\$11,174,323.75	
	(0.00)		1 113.23	\$ (1 113.23)	

* Refer to Liberty's summary table to see APCO and LUC allocations percentages in the Allocation percentages column in light with the number of the related Cost

LUCC Allocation to all Companies	LUCC Allocation % **	Total
Liberty Water		\$11,174,323.75
Calson		824,882.34
Granite State		669 235.23
Energy North		609 159.59
Midstates Gas		1 198 210.65
Midstates Water		821 757.69
Arlansas		40 668.18
Woodson - Hensley		195,511.40
Georgia		3,225.87
New England Gas		644 134.34
Whitehall Water		718 620.48
Whitehall Sewer		21 403.72
Park Water		21 324.82
Empire		791,224.76
		4,614,955.07
		11,174 323.85
		0.10

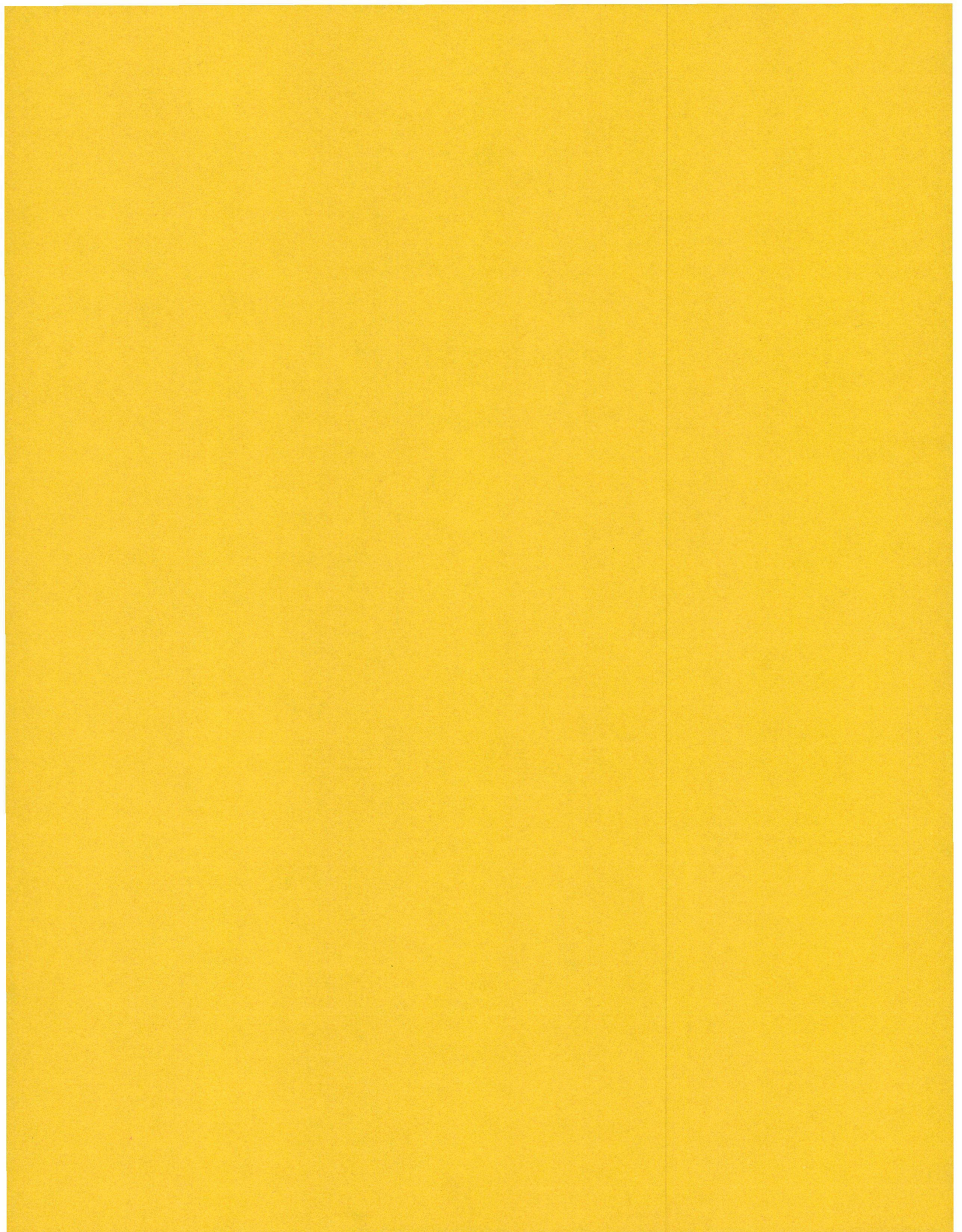
**Please refer to all the summary by month table for a full breakdown of allocation percent

Liberty Utilities Canada Liberty Algonquin Business Services															
		Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Total	
LUC - LABS Total Cost Pool CAD		\$ 1,494,775.13	\$ 801,221.91	\$ 1,898,257.05	\$ 1,903,619.44	\$ 329,441.93	\$ 2,060,892.34	\$ 749,026.96	\$ 1,313,405.20	\$ 1,543,294.51	\$ 1,140,445.05	\$ 1,521,634.88	\$ 2,111,578.28	\$ 16,867,792.68	
APCO		\$ 203,921.81	\$ 70,946.03	\$ 260,397.97	\$ 250,030.72	\$ 127,956.96	\$ 297,446.96	\$ 120,239.35	\$ 174,566.89	\$ 217,148.32	\$ 245,636.17	\$ 331,318.50	\$ 3,331,381.26	\$ 16,867,792.68	
LUC		\$ 1,290,382.12	\$ 704,275.88	\$ 1,637,859.08	\$ 1,653,588.72	\$ 316,645.55	\$ 1,763,205.37	\$ 628,787.61	\$ 1,138,838.31	\$ 1,325,946.35	\$ 897,461.73	\$ 1,175,992.98	\$ 1,780,259.78	\$ 14,534,411.41	
LW B020		\$ 98,015.93	\$ 53,544.53	\$ 124,325.70	\$ 118,727.66	\$ 22,735.18	\$ 126,598.18	\$ 47,878.48	\$ 84,042.66	\$ 87,850.64	\$ 73,608.50	\$ 84,164.67	\$ 131,377.52	\$ 1,072,780.66	
LUCC Conversion		1.333565	1.319005	1.310985	1.31386	1.344	1.3607	1.3298	1.2689	1.2605	1.2283	1.2605	1.2769		
Total Cost Pool USD		\$ 1,120,886.59	\$ 607,404.81	\$ 1,447,957.48	\$ 1,422,097.30	\$ 245,120.48	\$ 1,514,582.45	\$ 563,262.87	\$ 1,035,077.84	\$ 1,224,351.66	\$ 928,637.18	\$ 1,207,167.10	\$ 1,453,675.53	\$ 12,970,217.28	
APCO		\$ 152,518.11	\$ 73,944.04	\$ 198,504.23	\$ 186,785.74	\$ 25,202.74	\$ 137,614.77	\$ 53,191.05	\$ 97,794.02	\$ 112,430.12	\$ 116,570.32	\$ 151,932.38	\$ 1,198,210.05		
LUC		\$ 968,368.48	\$ 512,910.20	\$ 1,245,453.24	\$ 1,235,312.04	\$ 235,600.14	\$ 1,285,807.58	\$ 487,883.69	\$ 877,500.46	\$ 1,051,920.98	\$ 812,066.86	\$ 1,012,295.68	\$ 1,394,204.57	\$ 11,174,323.85	
LW B020		\$ 73,499.18	\$ 40,523.78	\$ 94,833.48	\$ 88,695.40	\$ 16,916.06	\$ 126,058.61	\$ 36,404.27	\$ 66,232.69	\$ 77,628.43	\$ 59,927.95	\$ 74,704.22	\$ 93,354.87	\$ 815,359.94	
LUCC Conversion		1.333565	1.319005	1.310985	1.31386	1.344	1.3607	1.3298	1.2689	1.2605	1.2283	1.2605	1.2769		
LUC - LABS and LABS Corp Combined		\$ 73,499.18	\$ 40,523.78	\$ 94,833.48	\$ 88,695.40	\$ 16,916.06	\$ 126,058.61	\$ 36,404.27	\$ 66,232.69	\$ 77,628.43	\$ 59,927.95	\$ 74,704.22	\$ 93,354.87	\$ 815,359.94	
LW B020		\$ 1,390.11	\$ 1,651.51	\$ 3,268.43	\$ 2,459.48	\$ 1,580.07	\$ 1,560.67	\$ 1,250.00	\$ 1,424.38	\$ 1,433.87	\$ 1,471.46	\$ 1,433.87	\$ 1,415.45	\$ 9,039.40	
Depreciation		\$ 15,142.89	\$ 8,163.18	\$ 12,992.50	\$ 17,843.66	\$ 3,220.56	\$ 19,210.46	\$ 7,298.41	\$ 13,609.74	\$ 16,000.86	\$ 12,275.87	\$ 15,386.77	\$ 11,776.20	\$ 152,921.10	
Expense		\$ 56,966.08	\$ 30,709.09	\$ 48,872.55	\$ 69,392.26	\$ 12,115.43	\$ 72,267.88	\$ 27,455.86	\$ 51,198.57	\$ 60,193.70	\$ 46,180.62	\$ 57,883.58	\$ 80,163.22	\$ 613,398.84	
Add'l Costs Bill to Exp Reg Companies		0.206028013	0.201441721	0.137003303	0.201179092	0.190384759	0.206477476	0.202709568	0.205483727	0.206211234	0.204843817	0.205969221	0.126144464		
LUCC Allocation to all Companies (US \$)															
Liberty Water		\$ 73,499.18	\$ 40,523.78	\$ 94,833.48	\$ 88,695.40	\$ 16,916.06	\$ 126,058.61	\$ 36,404.27	\$ 66,232.69	\$ 77,628.43	\$ 59,927.95	\$ 74,70			

Liberty Utilities Canada																
Liberty Algonquin Business Services																
				Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Total
Total				\$529 04	\$212 87	\$476 82	\$677 03	\$118 21	\$505 07	\$267 87	\$499 50	\$587 27	\$450 56	\$564 73	\$782 10	\$5,871 07
Variance GL WTR				(-0.01)	(-0.00)	(-0.00)	\$0 02	\$0 01	(\$1.00)	\$0 01	(-0.01)	(-0.00)	\$0 01	\$0 00	(\$0.00)	\$0 02
Variance GL SWR				(-0.01)	\$0 01	\$0 00	(-0.01)	\$0 00	\$0 00	(\$0.00)	(\$0.00)	(\$0.00)	\$0 00	(-0.00)	(\$0.00)	(-0.01)
Total																
Hill Country																
2017				Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Total
Expense	Jan	Feb	Mar	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
	0 004338509	0 002872279	0 005170978	\$5,966 08	\$30,709 09	\$48,872 55	\$69,392 26	\$12,115 43	\$72,267 88	\$27,455 86	\$51,198 57	\$60,193 70	\$46,180 62	\$7883 58	\$80163 22	\$613,398 84
Water	0 013078439	0 005195634	0 011796096	\$247 15	\$85 21	\$252 72	\$358 83	\$62 65	\$379 70	\$141 87	\$264 75	\$311 26	\$228 80	\$299 31	\$414 52	\$ 3,083 86
Sewer				\$745 03	\$159 55	\$576 51	\$818 56	\$142 81	\$852 48	\$323 87	\$603 84	\$710 05	\$544 75	\$682 80	\$845 61	\$ 7,106 07
Total				\$992 18	\$247 76	\$829 23	\$1,177 38	\$205 56	\$1,226 17	\$465 85	\$868 69	\$1,021 31	\$783 55	\$982 11	\$1,360 14	\$10,159 93
Actual GL WTR Bus				\$152 72	\$69 67	\$85 19	\$161 96	\$43 72	\$184 49	\$82 38	\$126 01	\$142 65	\$130 07	\$66 30	\$206 05	\$ 1,461 21
Actual GL SWR Bus				\$460 39	\$126 03	\$217 14	\$369 47	\$99 74	\$420 86	\$187 93	\$287 47	\$325 43	\$296 72	\$151 25	\$470 03	\$ 3,412 46
Actual GL WTR Corp				\$94 42	\$18 53	\$157 53	\$196 86	\$18 92	\$189 23	\$59 59	\$134 73	\$168 61	\$108 73	\$233 01	\$208 48	\$ 1,592 62
Actual GL SWR Corp				\$284 64	\$33 53	\$359 37	\$449 08	\$43 17	\$431 67	\$135 95	\$316 48	\$384 62	\$248 03	\$531 55	\$475 58	\$ 3,493 62
Total				\$992 17	\$247 76	\$829 23	\$1,177 37	\$205 55	\$1,226 16	\$465 85	\$868 69	\$1,021 31	\$783 55	\$982 11	\$1,360 14	\$10,159 91
Variance GL WTR				(\$0.01)	(\$0.01)	\$0 00	(-0.01)	(-0.01)	\$0 00	(\$0.00)	(-0.01)	(\$0.00)	\$0 00	(-0.00)	\$0 01	(\$0.00)
Variance GL SWR				\$0 00	\$0 01	\$0 00	(\$ 0.01)	(-0.00)	\$0 00	\$0 01	\$0 01	(-0.00)	(-0.00)	(-0.00)	(\$0.00)	\$0 01
Total Expended				\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
				\$5,966 08	\$30,709 09	\$48,872 55	\$69,392 26	\$12,115 43	\$72,267 88	\$27,455 86	\$51,198 57	\$60,193 70	\$46,180 62	\$7883 58	\$80163 22	\$613,398 84
Consolidated Silverleaf																
Actual GL All Water Business				\$1,394 45	\$930 80	\$824 52	\$1,402 98	\$378 74	\$1,598 10	\$713 59	\$1,091 56	\$1,235 71	\$1,126 70	\$574 31	\$1,784 82	\$13,056 28
Actual GL All Sewer Business				\$1,124 12	\$375 61	\$581 25	\$989 03	\$287 00	\$1,126 59	\$503 05	\$769 51	\$871 13	\$784 28	\$404 87	\$1,258 22	\$9,064 66
Actual GL All Water Corporate				\$862 14	\$247 61	\$1,364 58	\$1,705 26	\$163 92	\$1,638 94	\$516 21	\$1,201 72	\$1,460 49	\$941 83	\$2,018 41	\$1,805 86	\$15,926 97
Actual GL All Water Corporate				\$695 00	\$99 92	\$961 99	\$1,202 14	\$115 56	\$1,155 39	\$363 91	\$847 18	\$1,029 58	\$663 86	\$1,422 89	\$1,273 07	\$9,830 59
				\$4,075 71	\$1,653 04	\$3,732 34	\$5,299 41	\$925 22	\$5,519 02	\$2,096 76	\$3,909 97	\$4,596 91	\$3,526 77	\$4,420 48	\$6,121 97	\$45,878 50

OPUC RFI 1-27 1-28

5pp



RESPONSE TO REQUEST FOR INFORMATION

OPUC RFI 1-27 Referencing the Direct Testimony of Thomas Bourassa (RR-RD), Page 13, Lines 6-9, please provide invoices specific to the construction of the new well in the amount of \$429,000 requested for the post-test year plant adjustment.

RESPONSE: See the attached invoice for related to the post-test year plant.

OPUC RFI 1-27_Holly Lake Ranch PTY.pdf

Prepared by: Fatima Hameen, Supervisor, Finance

Sponsored by: Steve Ruppenthal, Manager, Operations



Purchase Order No.	106762
Date	12/20/2017

Supplier	8020-CMILL
----------	------------

Name	C. Miller Drilling
------	--------------------

Address 7355 East SH-154
Winnsboro, TX 75494

Ship To:

Liberty Utilities

12725 W. Indian School Rd., Ste D101
Avondale, AZ 85392

JAN 09 2012

Item	Quantity	Unit Price	Amount
8110-17025-3070	GL Code		
Drilling new well at Holly Ranch please see attached breakdown			\$ 429,000.00
	TOTAL:		\$ 429,000.00

Operations Manager

Operations Director

President - AZ, TX

Approval:

Approval:

Approval:

Steve R. Rasmussen

12/20/2017

Matthew Luedel

Steve handled ✓

C. Miller Drilling

7355 East SH-154
Winnsboro, TX 75494

903-725-6524
1-800-594-2187

Drilling Invoice

DATE	INVOICE #
12/14/2017	18041

BILL TO
Liberty Utilities Holly Lake Ranch Steve Ruppenthal 16623 Fm 2493 Suite E Tyler, Texas 75703

Dec 15, 2017
entered by
MPO #
106768

TERMS
Due on receipt

QUANTITY	DESCRIPTION	DATE	RATE	AMOUNT
8110-17048-3070	1 Line Item #1 of Contract 1000' Test Hole	11/17/2017	30,000.00	30,000.00
8110-17048-3070	1 Line Item #2 of Contract Test Well	11/24/2017	18,000.00	18,000.00
8110-17048-3070	1 Line Item #3 of Contract Production Well #9	12/14/2017	208,300.00	208,300.00
8110-17048-3110	1 Line Item #4 of Contract Pump System	12/14/2017	25,033.00	25,033.00
8110-17048-3040	1 Line Item #5 of Contract Electrical	12/14/2017	7,000.00	7,000.00
8110-17048-3040	1 Line Item #6 of Contract Well Head	12/14/2017	5,000.00	5,000.00
8110-17048-3070	1 Expedite water Analysis Approved 11-28-17	12/14/2017	480.00	480.00
8110-17048-3110	1 Upgrade project to a 16x10" Well, with 125 HP / 600 GPM System and a Soft Start. Upgrade includes all add and deducts of contract.	12/14/2017	135,187.00	135,187.00

Total

Balance Due

*If this invoice was paid with a credit card the receipt will show the payment being received by Centerline Manufacturing which is our partner company.

7355 East SH-154
Winnsboro, TX 75494

903-725-6524
1-800-594-2187

DATE	INVOICE #
12/14/2017	18041

**Liberty Utilities Holly Lake Ranch
Steve Ruppenthal
16623 Fm 2493 Suite E
Tyler, Texas 75703**

Due on receipt

Total	\$429,000.00
Balance Due	\$429,000.00

All work regulated by: Texas Department of License and Regulations P.O. Box 12157 Austin, Texas 78711 1-800-803-9202, 512-463-7880

RESPONSE TO REQUEST FOR INFORMATION

OPUC RFI 1-28 Admit or Deny that legislative advocacy expenses have been included as a test year expense. If admitted, please provide the amount and the account number in which such expense is included.

RESPONSE: Deny. The Company did not include legislative advocacy expenses in the test year expenses.

Prepared by: Leticia Washington, Manager, Rates and Regulatory Affairs

Sponsored by: Thomas Bourassa – Certified Public Accountant on behalf of Liberty Utilities
Silverleaf, LLC

OPUC RFI 1-18 w. attachment

4pp

RESPONSE TO REQUEST FOR INFORMATION

OPUC RFI 1-18 Referencing the Direct Testimony of Gaetana Girardi, Page 21, Line 10, please provide workpapers demonstrating the derivation and allocation of the \$258,372 to Liberty Silverleaf. Within these workpapers, please include:

- a. Total Direct Costs incurred by APUC, LUC, LABS Canada, and LUSC on behalf of Liberty Silver leaf.
- b. Total Indirect Costs incurred by APUC, LUC, LABS Canada, and LUSC and how such costs are allocated to Liberty Silverleaf. Please provide all source data used in the derivation of allocation factors and clearly demonstrate which allocation factor from the CAM was applied to allocate each type of indirect cost to Liberty Silverleaf.
- c. Ensure that the workpapers provided are maintained in their native, Excel-based format with all formulas and links intact.

RESPONSE:

- a. Total direct cost incurred from APUC, LUCC, LABS Canada and LUSC to Liberty Silverleaf is \$92,504.69.
- b. Total indirect cost incurred from APUC, LUC, LABS Canada and LUSC to Liberty Silverleaf is \$164,074.19.
- c. Please refer to attached excel document Silverleaf Data Request OPUC RFI 1st set.xlsx on the tab labeled Derivation on \$258,372. The reference tab links to all workbooks with detail corporate cost allocations. Refer to tabs labeled OPUC RFI 1-18 for derivation of cost in attached excel file Silverleaf Data Request OPUC 1st set.

Prepared by: Leticia Washington, Manager, Rates and Regulatory Affairs

Sponsored by: Gaetana Girardi, Director – Regulatory Strategy

Liberty Utilities (Silverleaf Water and Sewer) Corp					
Please see reference tab for corresponding workbook					
Holly Ranch Account number	Big Eddy Account number	Piney Shores Account number	Hill Country Account number	Account description	Amount
8110-2-0100-69-5010-6368	8112-2-0100-69-5010-6368	8114-2-0100-69-5010-6368	8116-2-0100-69-5010-6368	LABS Business Labor Allocations	8,364.06
8110-2-0100-69-5010-6369	8112-2-0100-69-5010-6369	8114-2-0100-69-5010-6369	8116-2-0100-69-5010-6369	LABS Corporate Service labor allocation	9,274.16
8110-2-0100-69-5200-6343	8112-2-0100-69-5200-6343	8114-2-0100-69-5200-6343	8116-2-0100-69-5200-6343	LABS US Bus - Admin	5,817.25
8110-2-0100-69-5200-6371	8112-2-0100-69-5200-6371	8114-2-0100-69-5200-6371	8116-2-0100-69-5200-6371	LABS US Corp - Admin	6,156.25
8110-2-0100-69-5010-6343	8112-2-0100-69-5010-6343	8114-2-0100-69-5010-6343	8116-2-0100-69-5010-6343	LABS US Bus - Labor	1,573.01
8110-2-0100-69-5010-6371	8112-2-0100-69-5010-6371	8114-2-0100-69-5010-6371	8116-2-0100-69-5010-6371	LABS US Corp - Labor	5,601.25
8110-2-0100-69-5200-6368	8112-2-0100-69-5200-6368	8114-2-0100-69-5200-6368	8116-2-0100-69-5200-6368	LABS Business NonLabor Allocations	13,056.28
8110-2-0100-69-5200-6369	8112-2-0100-69-5200-6369	8114-2-0100-69-5200-6369	8116-2-0100-69-5200-6369	LABS Corporate Service - Admin	13,926.97
8110-2-0100-69-5200-6346	8112-2-0100-69-5200-6346	8114-2-0100-69-5200-6346	8116-2-0100-69-5200-6346	LU Canada Allocation - Labour	3,086.71
8110-2-0100-69-5200-6347	8112-2-0100-69-5200-6347	8114-2-0100-69-5200-6347	8116-2-0100-69-5200-6347	LU Canada Allocation - Admin	16,203.94
8110-2-0100-69-5200-6348	8112-2-0100-69-5200-6348	8114-2-0100-69-5200-6348	8116-2-0100-69-5200-6348	APUC Allocation - Labour	11,261.01
8110-2-0100-69-5200-6349	8112-2-0100-69-5200-6349	8114-2-0100-69-5200-6349	8116-2-0100-69-5200-6349	APUC Allocation - Admin	18,639.02
8110-2-0100-69-5200-6373	8112-2-0100-69-5200-6373	8114-2-0100-69-5200-6373	8116-2-0100-69-5200-6373	LU Region Admin	22,726.37
8110-2-0100-69-5010-6373	8112-2-0100-69-5010-6373	8114-2-0100-69-5010-6373	8116-2-0100-69-5010-6373	LU Region Labor	15,144.60
8110-2-0100-69-5200-6372	8112-2-0100-69-5200-6372	8114-2-0100-69-5200-6372	8116-2-0100-69-5200-6372	LUSC Admin	1,019.04
8110-2-0200-69-5010-6368	8112-2-0200-69-5010-6368	8114-2-0200-69-5010-6368	8116-2-0200-69-5010-6368	LABS Business Labor Allocations	5,899.26
8110-2-0200-69-5010-7370	8112-2-0200-69-5010-7370	8114-2-0200-69-5010-7370	8116-2-0200-69-5010-7370	LABS Corporate Service labor allocation	6,548.76
8110-2-0200-69-5200-7371	8112-2-0200-69-5200-7371	8114-2-0200-69-5200-7371	8116-2-0200-69-5200-7371	LABS US Bus - Admin	4,012.69
8110-2-0200-69-5200-7372	8112-2-0200-69-5200-7372	8114-2-0200-69-5200-7372	8116-2-0200-69-5200-7372	LABS US Corp - Admin	3,897.67
8110-2-0200-69-5010-7371	8112-2-0200-69-5010-7371	8114-2-0200-69-5010-7371	8116-2-0200-69-5010-7371	LABS US Bus - Labor	1,108.72
8110-2-0200-69-5010-7372	8112-2-0200-69-5010-7372	8114-2-0200-69-5010-7372	8116-2-0200-69-5010-7372	LABS US Corp - Labor	3,821.40
8110-2-0200-69-5200-7340	8112-2-0200-69-5200-7340	8114-2-0200-69-5200-7340	8116-2-0200-69-5200-7340	LABS Business NonLabor Allocations	9,064.66
8110-2-0200-69-5200-7370	8112-2-0200-69-5200-7370	8114-2-0200-69-5200-7370	8116-2-0200-69-5200-7370	LABS Corporate Service - Admin	9,830.59
8110-2-0200-69-5200-7346	8112-2-0200-69-5200-7346	8114-2-0200-69-5200-7346	8116-2-0200-69-5200-7346	LU Canada Allocation - Labour	2,179.48
8110-2-0200-69-5200-7347	8112-2-0200-69-5200-7347	8114-2-0200-69-5200-7347	8116-2-0200-69-5200-7347	LU Canada Allocation - Admin	11,475.45
8110-2-0200-69-5200-7348	8112-2-0200-69-5200-7348	8114-2-0200-69-5200-7348	8116-2-0200-69-5200-7348	APUC Allocation - Labor	7,966.60
8110-2-0200-69-5200-7349	8112-2-0200-69-5200-7349	8114-2-0200-69-5200-7349	8116-2-0200-69-5200-7349	APUC Allocation - Admin	13,245.82
8110-2-0200-69-5200-7374	8112-2-0200-69-5200-7374	8114-2-0200-69-5200-7374	8116-2-0200-69-5200-7374	LU Region Admin	16,021.23
8110-2-0200-69-5010-7374	8112-2-0200-69-5010-7374	8114-2-0200-69-5010-7374	8116-2-0200-69-5010-7374	LU Region Labor	10,675.63
8110-2-0200-69-5200-7373	8112-2-0200-69-5200-7373	8114-2-0200-69-5200-7373	8116-2-0200-69-5200-7373	LUSC Admin	773.81
					258,371.69
				Rates APP	258,372.00

RESPONSE TO REQUEST FOR INFORMATION

OPUC RFI 1-35 Please identify and describe any and all benefits made available to executives and senior leadership with APUC, LUC, LABS Canada, or LUSC which are not made available to all other salaried employees. Please list the costs associated with such benefits at the organizational level incurred, and the amount directly assigned or allocated for recovery in the test year in this filing.

RESPONSE: Certain employees receive a Supplemental Executive Retirement Plan (SERP) for which the total costs for 2017 were \$725,321. Certain employees receive a Defined Contribution Pension Plan for which the total costs for 2017 were \$358,060. The costs allocated for recovery in the test year in this filing will be included in the response to OPUC RFI 1-19. Under the Cost Allocation Manual, Liberty Silverleaf receives only a small allocation attributable to those benefit plans.

Prepared by: Punam Maini, Director, Total Rewards

Sponsored by: Gaetana Girardi, Director, Regulatory Strategy

RESPONSE TO REQUEST FOR INFORMATION

OPUC RFI 1-36 For each system included in this filing, please provide billed water consumption and billed sewer flow, by requested rate tier and month, for January 2017 through December 2017.

RESPONSE: See OPUC RFI 1-01 response for the billed water consumption and billed sewer flow by requested rate tier and month for January 2017 through December 2017.

OPUC RFI 1-1_Rate Book SL Water17 Inverted Tier.xlsx
OPUC RFI 1-1_Rate Book SL Sewer17 Single Tier.xlsx

Prepared by: Leticia Washington, Manager, Rates and Regulatory Affairs and Thomas Bourassa
– Certified Public Accountant on behalf of Liberty Utilities Silverleaf, LLC

Sponsored by: Thomas Bourassa – Certified Public Accountant on behalf of Liberty Utilities
Silverleaf, LLC