Freeze Stage 1 Winterization Checklist
Appendix B

PH Robinson Peakers

5501 TX-146

Bacliff, TX 77546

Instructions

This checklist is to be completed whenever temperatures will reach 35F or below. Each component will be verified complete, signed off, and dated. This is a requirement of the Winterization Plan and will be saved for record keeping.

CT4

Check	Signature	Date
CBV Functional Test		
Purge Valve Functional Test		
Scaffold Windbreak Inspection		
Hydraulic Oil Solenoid and Purge Valve Heating Turned On		
Gas House Heaters Turned On		
CBV Insulation Inspection		
Fuel Gas Bypass Valve Insulation Inspection		
LO Cooler Spray Off and Drained		
Cooler Filter Drained		
All Eyewash Stations Flowing		
Appendix D Logs Printed & in Use		

Notes

Freeze Stage 1 Winterization Checklist
Appendix B

PH Robinson Peakers

5501 TX-146

Bacliff, TX 77546

Instructions

This checklist is to be completed whenever temperatures will reach 35F or below. Each component will be verified complete, signed off, and dated. This is a requirement of the Winterization Plan and will be saved for record keeping.

CT5

Check	Signature	Date
CBV Functional Test		
Purge Valve Functional Test		
Scaffold Windbreak Inspection		
Hydraulic Oil Solenoid and Purge Valve Heating Turned On		
Gas House Heaters Turned On		
CBV Insulation Inspection		
Fuel Gas Bypass Valve Insulation Inspection		
LO Cooler Spray Off and Drained		
Cooler Filter Drained		
All Eyewash Stations Flowing		
Appendix D Logs Printed & in Use		

Notes

Freeze Stage 1 Winterization Checklist
Appendix B

PH Robinson Peakers

5501 TX-146

Bacliff, TX 77546

Instructions

This checklist is to be completed whenever temperatures will reach 35F or below. Each component will be verified complete, signed off, and dated. This is a requirement of the Winterization Plan and will be saved for record keeping.

CT6

Check	Signature	Date
CBV Functional Test		
Purge Valve Functional Test		
Scaffold Windbreak Inspection		
Hydraulic Oil Solenoid and Purge Valve Heating Turned On		
Gas House Heaters Turned On		
CBV Insulation Inspection		
Fuel Gas Bypass Valve Insulation Inspection		
LO Cooler Spray Off and Drained		
Cooler Filter Drained		
All Eyewash Stations Flowing		
Appendix D Logs Printed & in Use		

Notes

Freeze Stage 2 Winterization Checklist

Appendix C

PH Robinson Peakers

5501 TX-146

Bacliff, TX 77546

Instructions

This checklist is to be completed whenever temperatures will reach 32F or below. Each component will be verified complete, signed off, and dated. This is a requirement of the Winterization Plan and will be saved for record keeping.

Check	Signature	Date
Hourly Winterization Logs Printed and in Use		
Check Each Bellmouth Window Hourly for Icing		
Eyewash station handles and valve opened with valve disconnected		

Notes

CT1	Freeze Stage 1 Rounds (Every 4 hours)	Time	Ambient Temp	Lube Oil Temp	Lube Oil Tank Heaters (On/Off)	Bellmouth Icing (Y/N)	Gas cab and portable heaters operational (Y/N)	Safety Shower (F=flowing/NF=not flowing)	Moisture Separators Drained (Y/N)	Verified By:	Freeze Stage 2 Rounds (Hourly)	Time	Ambient Temp	Lube Oil Temp	Lube Oil Tank Heaters (On/Off)	Bellmouth Icing (Y/N)	Gas cab and portable heaters operational (Y/N)	Safety Shower (F=flowing/NF=not flowing)	Moisture Separators Drained (Y/N)	Verified By:
DATE	Use at 35F										Use at 32F									

CT2

DATE	Freeze Stage 1 Rounds (Every 4 hours)	Time	Ambient Temp	Lube Oil Temp	Lube Oil Tank Heaters (On/Off)	Bellmouth Icing (Y/N)	Gas cab and portable heaters operational (Y/N)	Safety Shower (F=flowing/NF=not flowing)	Moisture Separators Drained (Y/N)	Verified By:	Freeze Stage 2 Rounds (Hourly)	Time	Ambient Temp	Lube Oil Temp	Lube Oil Tank Heaters (On/Off)	Bellmouth Icing (Y/N)	Gas cab and portable heaters operational (Y/N)	Safety Shower (F=flowing/NF=not flowing)	Moisture Separators Drained (Y/N)	Verified By:
	Use at 35 F										Use at 32 F									

CT3	Freeze Stage 1 Rounds (Every 4 hours)	Time	Ambient Temp	Lube Oil Temp	Lube Oil Tank Heaters (On/Off)	Bellmouth Icing (Y/N)	Gas cab and portable heaters operational (Y/N)	Safety Shower (F=flowing/NF=not flowing)	Moisture Separators Drained (Y/N)	Verified By:	Freeze Stage 2 Rounds (Hourly)	Time	Ambient Temp	Lube Oil Temp	Lube Oil Tank Heaters (On/Off)	Bellmouth Icing (Y/N)	Gas cab and portable heaters operational (Y/N)	Safety Shower (F=flowing/NF=not flowing)	Moisture Separators Drained (Y/N)	Verified By:
DATE	Use at 35 F										Use at 32 F									

CT4

DATE	Freeze Stage 1 Rounds (Every 4 hours)	Time	Ambient Temp	Lube Oil Temp	Lube Oil Tank Heaters (On/Off)	Bellmouth Icing (Y/N)	Gas cab and portable heaters operational (Y/N)	Safety Shower (F=flowing/NF=not flowing)	Moisture Separators Drained (Y/N)	Verified By:	Freeze Stage 2 Rounds (Hourly)	Time	Ambient Temp	Lube Oil Temp	Lube Oil Tank Heaters (On/Off)	Bellmouth Icing (Y/N)	Gas cab and portable heaters operational (Y/N)	Safety Shower (F=flowing/NF=not flowing)	Moisture Separators Drained (Y/N)	Verified By:
	Use at 35 F										Use at 32 F									

CT5

DATE

Freeze Stage 1 Rounds (Every 4 hours)

Time	Ambient Temp	Lube Oil Temp	Lube Oil Tank Heaters (On/Off)	Bellmouth Icing (Y/N)	Gas cab and portable heaters operational (Y/N)	Safety Shower (F=flowing/NF=not flowing)	Moisture Separators Drained (Y/N)	Verified By:
Use at 35F								

Freeze Stage 2 Rounds (Hourly)

Time	Ambient Temp	Lube Oil Temp	Lube Oil Tank Heaters (On/Off)	Bellmouth Icing (Y/N)	Gas cab and portable heaters operational (Y/N)	Safety Shower (F=flowing/NF=not flowing)	Moisture Separators Drained (Y/N)	Verified By:
Use at 32F								

CT6	Freeze Stage 1 Rounds (Every 4 hours)	Time	Ambient Temp	Lube Oil Temp	Lube Oil Tank Heaters (On/Off)	Bellmouth Icing (Y/N)	Gas cab and portable heaters operational (Y/N)	Safety Shower (F=flowing/NF=not flowing)	Moisture Separators Drained (Y/N)	Verified By:	Freeze Stage 2 Rounds (Hourly)	Time	Ambient Temp	Lube Oil Temp	Lube Oil Tank Heaters (On/Off)	Bellmouth Icing (Y/N)	Gas cab and portable heaters operational (Y/N)	Safety Shower (F=flowing/NF=not flowing)	Moisture Separators Drained (Y/N)	Verified By:
DATE	Use at 35F										Use at 32F									

Freeze Stage 3 Winterization Logs

Appendix D

This log is to be completed every hour once a Freeze Stage 3 has been enacted. The CRO and OMT will test all Purge Valves in accordance with section 7.3.2 of the PHR Winter Weatherization Plan and the OMT will put their initials in the box for all units once the test has been completed satisfactory. Put a X in any box for a failed test and give a detailed explanation in the notes at the bottom of this log sheet.

DATE:_____

TIME	CT1	CT2	CT3	CT4	CT5	CT6
0100						
0200						
0300						
0400						
0500						
0600						
0700						
0800						
0900						
1000						
1100						
1200						
1300						
1400						
1500						
1600						
1700						
1800						
1900						
2000						
2100						
2200						
2300						
2400						

Notes

Weather Watch Checklist

Appendix E

PH Robinson Peakers

5501 TX-146

Bacliff, TX 77546

Instructions

This checklist is to be completed every 4 (four) hours once a Freeze Stage 0 has been enacted. The NOAA weather tracker will be used to forecast weather changes for the upcoming 4 (four) hour block.

PHR Weather Watch Logs	https://forecast.weather.gov/MapClick.php?w0=t&w6=rh&AheadHour=0&Submit=Submit&&FcstType=digital&textField1=29.5082&textField2=-94.9919&site=all

Only use this Round sheet if the plant is at a Freeze Stage 0 in conjunction with deteriorating conditions

If a future temp is expected to trigger a change in Freeze state, please document this round sheet. Please use the attached website for forecasting.

Date	Time	Current Ambient Temp °F	Time/Temp °F in 4 hours (Actual)	Time/Temp °F in 4 hours (Actual)	Time/Temp °F in 4 hours (Actual)	Freeze Stage at Beginning of Log Entry	Verified By:

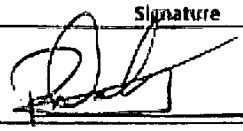
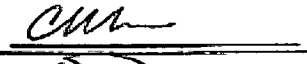
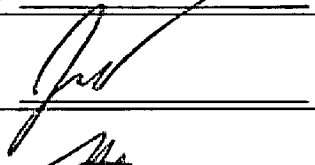
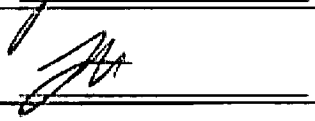
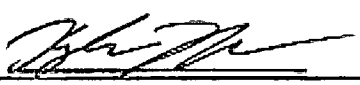
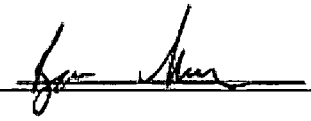
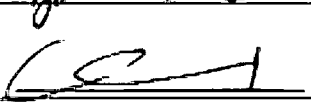
Appendix F

PHR Winter Weather Emergency Contact List

Tenaska	QSE	[redacted]
Alonzo Ramirez	Rockland VP	
Keith Feemster	Rockland Asset Management	
Elena DeLauney	Rockland Finance VP	
Matt Becker	Rockland Finance VP	
Amanda DeLeon	Tenaska Energy Manager	
Jon Stepka	Tenaska Energy Manager	
Roger Lee	PHR PM	
Woody DeBenedictis	PHR ICE	

Appendix G

PHR Winter Weatherization Training Sign in sheet

Name	Signature	Date
Pat Daly		10-31-2022
Clyde Mahan		10/31/22
Ron Dennison		10.31.22
Jacob Webb		10.31.22
Joel Ayala		10-31-22
Kyle Miller		10/31/22
Ryan Moore		10/31/22
Corbin Gilbert		10 31.22
Woody DeBenedictis		10/31/22
Roger Lee		10-31-22

Increased Staffing for Weather

Appendix H

Instructions

This Appendix is to be used whenever there is a need for increased staffing due to a weather event. Be sure to fill in every blank and answer all questions. Below are descriptions of potential staffing needs.

• Increase day/night shift size by scheduling extra control room board operator and outside operators for the anticipated duration of the event.
• Increase mechanical and electrical maintenance coverage to around the clock by adding plant staff to the day/night shift working a 12-hour shift schedule for the anticipated duration of the event.
• If necessary secure mechanical, electrical, and scaffold/insulation contractor support to supplement plant staffing for the anticipated duration of the event.
• Notify the maintenance staff that have not been placed on shift of the need to be available for call out/overtime as required.

DATE:_____ WEATHER EVENT TYPE:_____

Plant staff informed of weather event?	YES / NO
Plant staff needed for this weather event?	YES / NO
Plant staff called in for this weather event?	YES / NO
Contractors needed onsite?	YES / NO
Contractors called in for this weather event?	YES / NO

NOTES

Name:_____ Signature:_____

Appendix I

Supplies List

Electrolyte products/Drinks/Squenchers

Cooling Water Gel neck wraps/Cooling Towel

Mobile Air Conditioning Unit

Sunscreen

Ice Chests/Coolers

Mobile Fans

Hand Heating Pads

Cold Weather Work Gloves

Space Heaters

Propane Torches/Extra Bottles

Heat Trace

Tarps

Bungee Cord

D-Batteries

AA-Batteries

C- Batteries

Propane Stove

Propane Stove Fuel

Pots/ Pans/Cooking Utensils

Battery Operated Weather Radio

Rope (1/2" Polyester)

Duct Tape

Can Opener

Plastic Sheeting

Large Trash Bags

Flashlights

Toothbrushes

Toothpaste

Air Mattress'

Paper Towels

Disinfectant Spray

Hand Sanitizer

Gallon Zip Lock Bags

Paper Plates

Forks, Spoons & Knifes

Strike anywhere matches

Emergency Candles

Bottled Water

Toilet Paper

Disinfecting Wipes

E. PHR Summer Weatherization Procedure

PH Robinson Peakers

Standard Operation Procedure

Summer Weatherization

Rev	Date	Originator	Checked	Approved
0	04/30/2021	R. Dennison	W. DEBENEDICTIS	r. lEE

Table of Contents

1.0 PURPOSE

1.1 The Summer Weather procedure will provide guidance for protection of equipment during hot weather conditions.

2.0 SCOPE

2.1 This SOP provides instructions to plant personnel for plant readiness, Detailed checklist to be completed to secure equipment. Equipment modifications and operating experience will necessitate additions, and deletions to these procedures.

2.2 It is acknowledged that this document does not cover all plant or system operating scenarios. This document has been developed to assist plant personnel with the knowledge to properly secure the plant and operate during severe weather conditions. This document does not take the place of sound operating practices or knowledge gained through experience.

3.0 REFERENCE

3.1 Plant P. & I.D. drawings.

3.1.1 Found on the PH Robinson Server under G Drive → Operations → PHR Training → Drawings and Specifications.

3.2 Summer Weatherization Checklists, Appendixes, and Logs.

3.2.1 Found on the PH Robinson Server under G Drive → PHR Weatherization Plans → PHR Summer Weatherization.

4.0 DEFINITIONS

4.1 Extreme Summer Weather – Weather conditions that warrant protection of equipment during conditions that can damage equipment, cause failure, or prevent the plant from dispatch.

5.0 RESPONSIBILITIES

5.1 The Plant Manager is responsible for the effective implementation of this procedure.

5.2 The Plant Manager is responsible for ensuring that plant personnel are properly trained and qualified, as required, to implement this procedure.

5.3 The Control Room Operator (CRO) is responsible for assigning a properly trained and qualified Operations and Maintenance Technician (OMT) to implement this procedure in a safe and effective manner.

6.0 LIMITS AND PRECAUTIONS

6.1 Environmental – Store glycol for exchangers in proper containers.

6.2 Health & Safety – Be aware of hot surfaces. Always wear proper PPE equipment when working on or around plant equipment.

6.3 Regulatory - There are no Regulatory requirements associated with this procedure.

6.4 Other - There are no other requirements.

7.0 PROCEDURE

7.1 Summer Weatherization Checklist is located on the PH Robinson Server under G Drive → PHR Weatherization Plans → Summer Weatherization

Complete the following IAW Appendix A Summer Weatherization Checklist

7.1.1 CRO/ASM will ensure that all plant operators are trained in the operation and location of plant equipment listed in the procedure.

7.2 Coordinate with CRO on test procedure: The following will be performed with assistance from the Auxiliary Operator.

7.2.1 Bleed Valve Test

a) Perform Compressor Bleed Valve Test when unit is Offline

b) AO - Connect instrument air to inlet hose connection for Bleed Valves.

c) Select Unit to be tested on DCS

d) Select Maintenance Page from DCS

e) Select and change operating mode from "Auto" to "Off". No tests will initiate with the unit in "Auto"

f) CRO – Communicate to AO to line up for supply air to CBV being tested.

g) CRO will initiate "Test On" on the DCS. AO/CRO will verify in the field and DCS that both CBVs operate. Fully Closed/Fully Open. Stroke valves several times to verify proper operation.

h) Positive results – Fully open (Green Indication) Closed (Red Indication).

End of Test

7.3 Coordinate with CRO on test procedure: The following will be performed with assistance from the Auxiliary Operator.

7.3.1 Purge Valve Test

a) Perform Purge Valve Test Only When Unit Is Offline.

b) Using the HMI Select the GAS FUEL Screen.

c) Using the PURGE SYSTEM TEST select ON.

d) The Purge Valves VA13-1 & VA13-2 should uniformly stroke fully open in less than 30 seconds

e) Using the PURGE SYSTEM TEST select OFF.

f) The Purge Valves VA13-1 & VA13-2 should uniformly stroke fully shut in less than 30 seconds

Repeat Several Times. (3 times?)

g) Leave PURGE SYSTEM TEST in the OFF position when complete, VA13-1 & VA13-2 are shut.

h) Do a Master Reset and check to ensure all alarms & faults associated with this Test are reset.

I) Begin troubleshooting if valves do not stroke uniformly open & close in less than 30 seconds.

j) Select "Test Off"

k) Return unit from "Off" to "Auto"

l) Perform a "Master Reset" – Verify all alarms are reset.

End of Test

7.4 Outside Plant Equipment Protection:

7.4.1 AC units at PEECC

a) Check operation of each unit.

b) Verify Unit cycles appropriately.

c) Verify proper temperature in PEECC.

d) Check for any unusual sounds.

7.4.2 Plant Buildings/MCC/Switchyard

a) Check the operation of each unit.

b) Verify cooling temp with thermostat.

c) Check outside compressor for any unusual sounds.

7.4.3 Lube Oil Cooler Spray

a) Properly lined up with supply water

b) Test spray nozzles to evaluate plugged nozzles.

c) Unplug/replace nozzles that are not working correctly.

d) Verify Delta T across the Lube Oil cooler.

7.4.4 Generator Exciter Fans

a) Verify all fans are working correctly.

b) Operational checks for loose hardware, unusual noises.

7.4.5 Main/Aux Transformers

a) Visual inspection of all fans.

b) Operate fans in manual

c) Listen for unusual noises/rotation.

7.4.6 Plant Eye Wash Station

a) Check eye wash operation/flush

b) Replace/Repair any broken caps or covers.

7.5 Increased Staffing for Weather

7.5.1 Using Appendix B Increased Staffing for Weather the Plant Manager can at their discretion decide when an increase in staffing is required at the plant.

7.5.2 Examples of reasons for increased staffing include rotating staff to ensure heat exhaustion does not occur, additional manpower required to maintain plant operations, and increased rounds and log taking.

8.0 RECORDS

8.1 Appendix A Summer Weatherization Check List .

8.2 Appendix B Increased Staffing for Weather.

9.0 TRAINING REQUIREMENTS

9.1 Personnel having responsibility for assignments associated with this procedure shall be properly trained. All training shall be appropriately documented and maintained annually.

10.0 ATTACHMENTS

Appendix A - Summer Weatherization Checklist

Task	Description	Status	Initials	Date
Verify all A/C units for control and motor center are properly working	Contractor performed inspections and testing on all plant A/C units.	SAT/UNSAT		
Verify CT Lube Oil coolers differential temperatures and pressures are normal	Verified D/T and pressures are in normal range	SAT/UNSAT		
Verify Generator Exciter fans are operational	Operationally tested and verified for proper operation	SAT/UNSAT		
Verify Generator cooler temperatures and pressures are within range	Verified during dispatched runs.	SAT/UNSAT		
Verify all transformer radiator fans are functioning properly.	Operationally tested at each transformer	SAT/UNSAT		
Verify all Lube Oil cooler sprays	Function test/verified. All nozzles working	SAT/UNSAT		
Plant Eye Wash Stations – Verify lined up.	Function test all eye wash stations for cracked or broken pipes or caps	SAT/UNSAT		
Turbine Compartment Vent Fans	Check for proper operation.	SAT/UNSAT		
Accessory Compartment Vent Fans	Check for proper operation	SAT/UNSAT		

NOTES

Increased Staffing for Weather

Appendix B

Instructions

This Appendix is to be used whenever there is a need for increased staffing due to a weather event. Be sure to fill in every blank and answer all questions. Below are descriptions of potential staffing needs.

• Increase day/night shift size by scheduling extra control room board operator and outside operators for the anticipated duration of the event.

• Increase mechanical and electrical maintenance coverage to around the clock by adding plant staff to the day/night shift working a 12-hour shift schedule for the anticipated duration of the event.

• If necessary secure mechanical, electrical, and scaffold/insulation contractor support to supplement plant staffing for the anticipated duration of the event.

• Notify the maintenance staff that have not been placed on shift of the need to be available for call out/overtime as required.

DATE:_____ WEATHER EVENT TYPE:_____

Plant staff informed of weather event?	YES / NO
Plant staff needed for this weather event?	YES / NO
Plant staff called in for this weather event?	YES / NO
Contractors needed onsite?	YES / NO
Contractors called in for this weather event?	YES / NO

NOTES

Name:_____ Signature:_____

Emergency Supplies List

Appendix C

Electrolyte products/Drinks/Squenchers	Toothbrushes
Cooling Water Gel neck wraps/Cooling Towel	Toothpaste
Mobile Air Conditioning Unit	Air Mattress'
Sunscreen	Paper Towels
Ice Chests/Coolers	Disinfectant Spray
Mobile Fans	Hand Sanitizer
Hand Heating Pads	Gallon Zip Lock Bags
Cold Weather Work Gloves	Paper Plates
Space Heaters	Forks, Spoons & Knifes
Propane Torches/Extra Bottles	Strike anywhere matches
Heat Trace	Emergency Candles
Tarps	Bottled Water
Bungee Cord	Toilet Paper
D-Batteries	Disinfecting Wipes
AA-Batteries	C- Batteries
Propane Stove	Propane Stove Fuel
Pots/ Pans/Cooking Utensils	Battery Operated Weather Radio
Rope (1/2" Polyester)	Duct Tape
Can Opener	Plastic Sheeting
Large Trash Bags	Flashlights

F. PHR-OP-108 Hurricane Preparedness Procedure

Operations and Maintenance

P.H. Robinson Peakers

Hurricane Preparedness and Response Plan

Approved by: Roger Lee – Plant Manager

(Original) Date Issued: September 2018

PHR PEAKERS Bacliff TX	Revision: 5
	Issue Date: 06/2019
	Review Cycle: Yearly
	Procedure ID: HPRP

Table of Contents

1. Hurricane Policy

The P.H. Robinson Plant will strive to maintaining the ability to operate the Plant until such time that the safety of personnel, contractors, visitors and equipment is threatened or until the Plant is unable to export power.

Should it become necessary to shut the Plant down and evacuate the area, a minimum number of volunteers from the Emergency Hurricane Crew (EHC) identified on Attachment 1 may be asked to remain on site. The crew remaining after the shutdown will monitor the storm and maintain the Plant as well as possible, maintain communications, provide management updates, and facilitate the damage assessment and recovery efforts after the hurricane threat has passed. It is the policy of the Plant for the Plant Manager to not require the Emergency Hurricane Crew members to stay throughout the event if they feel their personal safety is at risk.

Final decisions as to what steps will be taken, and when they occur, will be made by the Plant Manager. The plan of the Plant is to maintain continuous electric service during emergencies if it has been requested and if it's capable of doing so. The Plant Manager will make this determination given the specific conditions and circumstances.

2. Purpose of the Plan

This Hurricane Preparedness and Response Plan (Plan) has been developed to assure that the Plant and employees are prepared in the event tropical storm or hurricane weather conditions should threaten to strike the Texas coast. The Plan is a complement to the P.H. Robinson Emergency Response developed pursuant to 29 CFR 1910.120(q).

This procedure provides information and outlines steps to protect personnel and equipment against the possible destruction from a hurricane, and is a guideline to follow rather than a set of rigid rules. The severity, speed and expected area of landfall will determine the time that these steps will be taken. The Plant relies on National Weather Service broadcasts for the latest changing weather conditions and the probability values for possible landfall of a tropical storm or hurricane.

3. Definitions

Hurricane is a tropical cyclone in which the maximum sustained surface wind is 64 knots (74 mph) or greater.

Hurricane Category under the Saffir-Simpson wind Scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. See Table 3.1.

Table 3.1 Saffir-Simpson Wind Scale[1]

Hurricane Category	Wind Speed (MPH)	Pressure (Millibars)	Storm Surge above Normal (Feet)
I	74 - 95	> 979	4-5
II	96 - 110	965 - 979	6-8
III	111 - 129	945 - 964	9-12
IV	130 - 156	920 - 944	13-18
V	> 156	< 920	> 18

Hurricane Season, officially extends from June 1st through November 30th.

Hurricane Warning is a warning that sustained winds of 64 knots (74 mph) or greater, associated with a hurricane are expected in a specified coastal area in 24 hours or less.

Hurricane Watch is an announcement for specific areas that a hurricane or an incipient hurricane poses a possible threat to a coastal area, generally within 36 hours.

Storm Surge is an abnormal rise in sea level accompanying a hurricane or other intense storm, and whose height is the difference between the observed level of the sea surface and the level that would have occurred in the absence of the storm.

Storm Tide is the actual sea level resulting from the astronomical tide combined with the storm surge.

Tropical Depression is a tropical low-pressure system in which the maximum sustained surface wind is 33 knots (38 mph) or less.

[1] https://www.nhc.noaa.gov/aboutsshws.php

Tropical Storm is tropical low-pressure system in which the maximum surface wind ranges from 34 to 63 knots (39 to 73 mph). This is the strength at which the National Hurricane Center applies a name to the storm.

Tropical Storm Warning is a warning for tropical storm conditions with sustained winds within the range of 39 to 73 mph, which are expected in a specified coastal area within 24 hours or less.

Tropical Storm Watch, is a Tropical storm conditions pose a threat to a coastal area generally within 36 hours.

4. Responsibilities

4.1 Plant Manager

The Plant Manager (or designee) is responsible for:

- Overall preparation and execution of the Plan, which includes declaring and terminating emergencies. During such times the Plant Manager responsible for administrative control of all Plant and emergency personnel activities.
- Assessing the impending weather situation and determining if and when to evacuate employees and whether to close down either Facility.

4.2 Control Room Operator (CRO)

The Plant Manager will designate two CRO with different shifts which will be responsible for:

- Developing the Hurricane Prevention and Response Plan
- Checking and maintaining emergency supplies
- Tracking and informing the Facility Manager of impending hurricanes
- Providing technical assistance and personnel accountability during emergencies, and
- Ensuring Plant areas and equipment are secured in advance of the storm

4.3 Plant Personnel

Plant personnel are responsible for:

- Securing all Plant equipment
- Checking and removing potential air borne objects from the Plant premises, and
- Providing emergency plant operations and maintenance.

If the Plant will remain open during the storm, employees should complete all necessary advance preparations to secure their family and homes and be prepared to report for emergency duty when called. Due to the limited capabilities, employees should not seek Plant site shelter for their families.

5. Procedure

The following procedures will be followed should any of the listed scenarios occur:

5.1 Hurricane Season Preparation

The start of hurricane season is June 1. As part of preparing for hurricane season, the Plant shall:

- Conduct a Hurricane Preparation Drill to ensure that the Plant is prepared should a hurricane occur in the area.
- Begin closely monitoring local weather forecasts and N.O.A.A weather forecasts for early signs of tropical storm warnings.
- All employees will review the Plan, which will be discussed and registered in the May Safety Meetings signing-sheets until all personnel are accounted for.
- Maintain a hurricane tracking data log (Attachment 4).
- Ensure that the items listed for the Hurricane Kit Supplies List (Attachment 2) are available. If not available, place order to complete the kit.
- Check condition of Plant roads and initiate repairs as needed.
- Check employee rain gear supplies.
- Check condition of doors, windows and compartment/building doors and initiate repairs as needed.
- Check condition of telephone and radio systems and initiate repairs as needed.
- Check first aid kits (Attachment 3) and restock if necessary.
-
- Check conditions of portable and stationary sump pumps and repair if necessary

5.2 Hurricane Watch

A tropical storm/hurricane has formed and has entered the Gulf of Mexico and has become a potential threat to the immediate area within 36 hours.

- Check schedule for available duty personnel and notify those people to maintain their readiness for call out (i.e., bedding, change of clothes, personal hygiene items, medications, special dietary needs, etc.).
- Verify adequate stock of emergency food supply.
- Check supply of treatment chemicals and all calibration gases; order as needed.
- Move mobile equipment to safe area to be tied down if it becomes necessary.
- Ensure that plant truck and utility vehicles are fueled.
- Pick up and secure all loose objects throughout the sites.
- Collect all exposed fire extinguishers, etc. and place them inside a secure enclosure.
- Secure all doors and windows on all buildings, skids and turbine compartments.
- Distribute tarps and rope, as needed, in control room, electronics room and switchgear enclosures.
- Tie down all compressed gas bottles.
- Secure all instrument and electrical junction box covers.
- Empty all trash receptacles and place them indoors. If possible, move trash dumpster into storage building area.
- Ensure transformer pit drains are open.
- Top off all tanks.

5.3 Hurricane Warning

A warning has been issued by the National Weather Service that sustained winds of 64 knots (74 mph) or greater, associated with a hurricane, are expected in a specified coastal area in 24 hours or less.

- The Plant Manager will decide whether and when to shut down the Plant and send employees home.
- If Plant will close, shut down all units utilizing shutdown procedures.

- Review section 5.2 and walk down plant to ensure all items have been completed.
- Control Room Operator will continue to monitor the progression of the storm and will continually update the Plant Manager.
- Transfer predetermined files to the chosen safe location. Back-up computers files onto discs and remove discs to safe location.
- Cover computers and other electronic equipment with plastic to protect against water damage.
- All emergency duty personnel shall remain at the Plant until released.

5.4 Hurricane at Hand

This phase starts when weather conditions make work or travel outdoors hazardous. When wind speed exceeds 50 mph, all outside movement should be avoided if possible.

At this time, all staff must wear a safety harness if it becomes necessary to go outdoors, so they may be able to tie off when possible. If it becomes necessary to go outdoors, no employee will work or make rounds alone.

5.5 Post Emergency

This phase begins when weather hazards have passed. Although the storm may have passed, hazards may still exist due to water and wind damage that may present hazardous conditions to personnel and equipment.

- Walk down the Plant to assess damage. Make an accurate report of all damage and repairs needed. Use video and photographs to document damage.
- Review the Plan for improvement.
- Restore all hurricane supplies

6. Other Natural Phenomena

This section applies to natural phenomena that may be experienced at the Plant, including, but not limited to, tornadoes, strong winds, or flooding. The following steps will be implemented should any of these conditions be experienced:

6.1 Verify and Assess

Upon observance of abnormal weather conditions, the Plant personnel will utilize every possible means at hand to determine the potential or real threat of the situation to personnel safety and the facility.

- Immediately notify the Plant Manager upon observance of the weather condition.
- Contact the National Weather Service or use the control room weather radio to determine the exact conditions in the area.
- Be aware of any information being provided over the Emergency Broadcast System regarding the conditions and actions required

6.2 Classify and Notify

The Plant Manager shall determine the severity of the conditions and declare the appropriate Emergency Classification (as specified in the Emergency Response Plan).

6.3 Action

The Plant Manager shall determine the severity of the conditions and declare the appropriate Emergency Classification (as specified in the Emergency Response Plan).

7. Resources

FEMA (http://www.fema.gov/)

Houston/Galveston National Weather Service Office (http://www.srh.noaa.gov/hgx/)

Texas Department of Public Safety (http://www.txdps.state.tx.us/dem/)

8. Attachments
    - Employee Phone List
    - Hurricane Kit Supplies List
    - List Examples of Food Items, Personal Hygiene & Miscellaneous Items
    - Hurricane Tracking Data Log

9. Records of Change

Revision	**Issue Date**	**Description of Change**	**Changed By** (name)	**Approve** (name)
Draft A		Initial document	R. Lee	M. Tulk
1	6/2019	Updated supplies list	R. Lee	R. Lee
2	6/2020	Updated Contact list	R. Lee	R. Lee
3	8/18/2021	Updated Contact list	J. Webb	R. Lee
4	3/7/2022	Updated contact list	J. Webb	R. Lee
5		Review and Update Procedure		

Attachment 1 - Employee Phone List

NAME	TITLE	WORK PHONE	HOME PHONE	CELL PHONE
Roger Lee	Plant Manager	[redacted]		
Jacob Webb	CRO - EHC			
Patrick Daly	CRO			
Ron Dennison	CRO			
Clyde Mahan	CRO			
Woody DeBenedictis	IC&E Tech			
Destini Wilson	Plant Admin			
Kyle Miller	OMT - EHC			
Ryan Moore	OMT			
Joel Ayala	OMT			
Corbin Gilbert	OMT			

Attachment 2 – Hurricane Kit Supplies List

Item	Check 1st week of June
Electrolyte products/Drinks/Squenchers	
Cooling Water Gel neck wraps/Cooling Towel	
Mobile Air Conditioning Unit	
Sunscreen	
Ice Chests/Coolers POT / PAN (Cooking utensils)	
Mobile Fans BATTERY OPERATED WEATHER RADIO	
Hand Heating Pads ROPE (1/2" POLYESTER, 6LB., 100')	
Cold Weather Work Gloves	
Space Heaters	
Propane Torches/Extra Bottles	
Heat Trace	
Tarps	
Bungee Cord	
D-Batteries	
AA-Batteries	
C- Batteries	
Propane Stove	
Propane Stove Fuel	
Pots/ Pans/Cooking Utensils	
Battery Operated Weather Radio	
Rope (1/2" Polyester)	
Duct Tape	
Can Opener	
Plastic Sheeting	

Item	Check 1st week of June
Large Trash Bags	
Flashlights	
Bottled Water	
Toilet Paper	
Disinfecting Wipes	
Toothbrushes	
Toothpaste	
Air Mattress'	
Paper Towels	
Disinfectant Spray	
Hand Sanitizer	
Gallon Zip Lock Bags	
Paper Plates	
Forks, Spoons & Knifes	
Strike Anywhere Matches	
Emergency Candles	

Attachment 3 – List Examples of Food, Personal Hygiene & Miscellaneous I Items

Examples of NON-Perishable Food
Ensure there is at minimum enough food supplies to feed 5 people for a 3- day duration. EXAMPLES of possible food items are listed below. (Rev1)
Beef Stew
Chili
Tuna Starter Kits
Chicken & Dumplings
Spaghetti-O's
Chicken Noodle Soup
Peanut Butter
Saltines
Chips, Large Bags
Dry cereal
Breakfast Bars
Vienna Sausages
Beef Jerky
Canned fruit
Jelly
Pasta
Bottled/canned pasta sauce
Ramen Noodles
Cookies
Coffee
Macaroni and Cheese kits
Canned Tuna
Canned Soup
Freeze Dried meal kits or MRE's

Emergency Supplies-Hygiene & Misc.			Emergency supplies FOOD Non-Perishable		
Quantity	**Check**	**Description**	**Quantity**	**Check**	**Description**
10 cases		Bottled Water	6 cans		Beef Stew
12 rolls		Toilet Paper	6 cans		Chili
3 cases		Clorox Wipes	6 ea		Tuna Starter Kits
6 each		Toothbrushes	6 cans		Chicken & Dumplings
2 each		Tooth Paste	6 cans		Spaghetti-O's
2 each		Air Mattress	6 cans		Campbell's Chicken Noodle Soup
6 rolls		Paper Towels	1 jar		Peanut Butter, Jelly
3 cans		Disinfectant Spray	6 boxes		Saltines
2 bottles		Hand Sanitizer	2 each		Fritos, Large Bags
2 boxes		Gallon Zip Lock Bags	3 boxes		Dry cereal
2 cases		Paper Plates	6 boxes		Breakfast Bars
2 boxes ea		Forks, Spoons & Knifes	12 cans		Vienna Sausages
1 box		Strike anywhere matches	4 bags		Beef Jerky
3		Emergency Candle	6 cans		Canned fruit

Attachment 4 – Hurricane Tracking Data Log

			Position		Wind	
Date	**Time**	**Name**	**Latitude**	**Longitude**	**Direction**	**Speed**

G. SMP-20 Pandemic Preparedness and Response Plan

TABLE OF CONTENTS

APPENDICES

Appendix A: Matrix of Major Risks and Mitigations

Appendix B: Critical Equipment and Materials

Appendix C: Vital Records Access and Storage

Appendix D: Plant-Specific Manuals and Procedural Instructions

Appendix E: Employee Contact List

Appendix F: Emergency Contacts List

Appendix G: Emergency Information Resources

REFERENCES

1. The information in this Pandemic Response Plan was primarily obtained from:

Center for Infectious Disease Research and Policy, University of Minnesota

http://www.codrap.umn.edu/

North American Electric Reliability Council

http://www.nerc.com

United States Center for Disease Control

http://www.cdc.gov/flu/avian/index.htm

2 Other websites with useful pandemic information:

http://www.pandemicflu.gov/ - U.S. Government Public Information Site

http://www.who.int/topics/influenza/en/ - World Health Organization Site

http://www.pandemicflu.gove/plan/businesschecklist.html - DHS site (U.S.)

http://www.phac-aspc.gc.ca/influenza - Public Health Agency of Canada

Sub-Sections

None

DOCUMENT REVISION HISTORY

Rev	Rev Date	Description of Changes / Comments

1. Introduction

The objective of this Safety Manual Procedure is to describe potential pandemic threats, to identify and prioritize the critical operations and business functions of this facility, and to provide appropriate response guidelines. The information in this Plan is based on generally accepted assumptions about the development, outbreak, and expected progress of an influenza pandemic. Site-specific information required for implementing this Plan (contact lists, recovery details, etc) is provided in Appendices A through G at the end of this Procedure. Control and survival of a pandemic will depend on the ability of thoughtful individuals to conduct a well planned and well organized response. The ultimate objective of this Plan is to prepare those individuals for success.

A. Pandemic Characteristics

a. *Timing and severity of the outbreak of a pandemic are uncertain and may not be immediately recognized. The most feared pandemic strains (such as avian influenza or "bird flu", H5N1) exhibit the following characteristics:*

b. Able to cause severe disease in humans

c. Global human population has no pre-existing immunity

d. Able to spread rapidly through human to human contact

2. *Once human to human transmission begins, the disease will spread very rapidly around the world within three to eight weeks. It is likely that 20 to 30 percent of global population will contract influenza during the first wave and will become very ill for several weeks. Additional waves will follow over one to two weeks.*

3. *Absentee rates for employees may be in the range of 25 to 60 percent for the duration of the pandemic, due to employee illness and to other factors such as caring for family members. Absentee rates will normally vary across an organization based on location and isolation.*

4. *With the expected high percentage of ill people, the existing healthcare system will be overwhelmed. Most government and health organizations will not have sufficient stockpiles of anti-viral agents or vaccines to treat those who are exposed or who will become ill if a pandemic occurs in the next one to two years.*

5. *Persons who contract the virus are not expected to contract it a second time due to a buildup of personal immunity. However, if the virus mutates, recurrences for the same individuals could be possible.*

6. *Personnel management will need to be modified to continue essential plant operations and business processes, while minimizing the spread of the virus.*

7. *The organizational response will need to include the distribution of accurate and timely information to employees, families, and customers.*

8. *Because of the percentage of affected people around the world, global trade and the global economy will be significantly impacted by the pandemic, limiting the supplies of food and manufactured goods.*

9. *Other cross dependencies with other segments of the utility sector (generators, transmission operators, distribution providers) and other critical infrastructure (communications, nuclear, natural gas, petroleum, transportation, emergency services, etc) as well as contractors and suppliers will be severely tested during influenza pandemic.*

B. Pandemic Phases

Information developed by the World Health Organization (WHO) defines five phases of a possible pandemic as listed below. These five phases provide a useful framework for pandemic response planning.

1. *Phase 1 -- Pandemic Alert*

   Governments, owners, and operators are notified that a pandemic is possible and preparedness plans should be reviewed and updated.

2. *Phase 2 -- Pre-Pandemic*

   Localized outbreaks are occurring with human to human transmission. Governments and electricity sector entities begin to assign resources, prepare staffing, and implement contingency plans. Begin an information distribution program to promote appropriate responses by employees.

3. *Phase 3 -- Pandemic Outbreak*

   General outbreaks across borders and continents. Organizations implement response plans.

4. *Phase 4 -- Maximum Disruption*

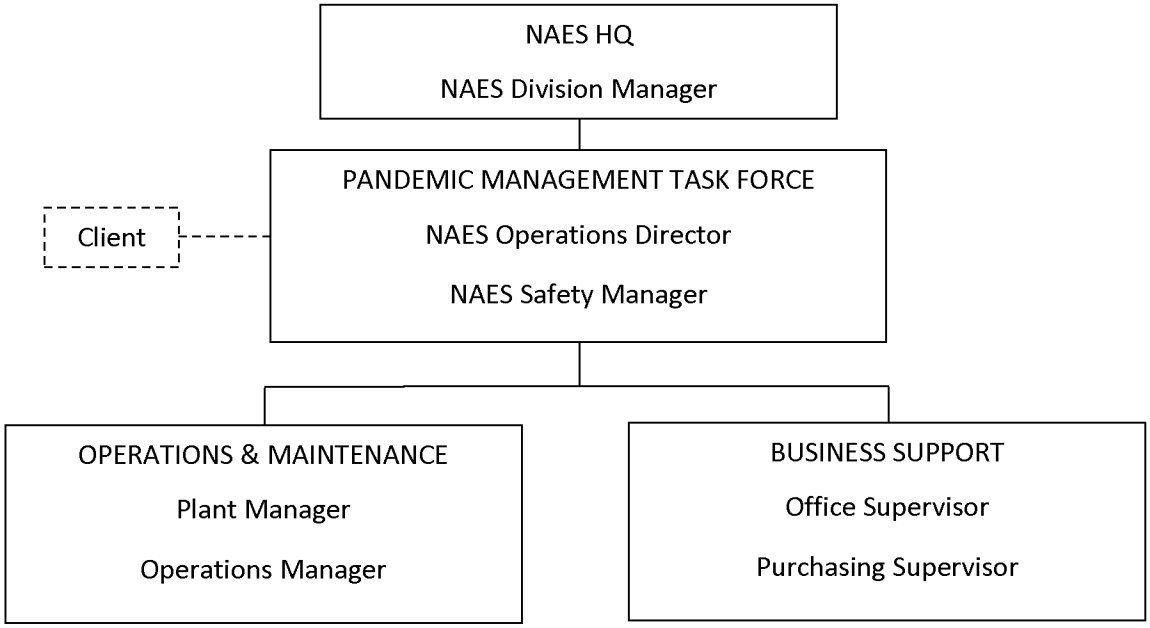
High absentee rates occur and fatalities begin to impact the workforce. This phase could last for several months.

5. *Phase 5 -- Prolonged Recovery*

Recovery will be slow and the underlying economy will weaken. Altered business conditions will be prevalent for large and small firms. This phase will last for at least three months and possibly up to six months.

2. Planning Responsibilities

The diagram below is the organization chart for the NAES Pandemic Management Program Team (PMPT) for this facility. The PMPT task force is responsible for the preparation, the continuing readiness, and (if needed) the implementation of this Plan.



A. Corporate Responsibilities

1. *Plan Development*

a. Recognize threat and authorize a planning and response effort

b. Identify critical departments needing response plans

c. Require preparation of approved Pandemic Response Plans

d. Provide schedule for preparation of Plans

e. Request draft policy changes needed for pandemic management

f. Adjust strategy and response level as needed

2. *PMPT Inputs*

    a. Pandemic threat and impact information

    b. Program coordination

    c. Initiation criteria

    d. Threat monitoring updates

    e. Department pandemic management plan templates and coaching

    f. Coordination with support departments (Human Resources, Information Services, etc)

3. *NAES Headquarters Inputs*

    a. General pandemic information (issues, impacts, mitigation strategies, pandemic management, suggested plan outline)

    b. Guidance and coaching

    c. Plan templates

    d. Family care outline and websites

4. *Plant Staff Responsibilities*

    a. Brainstorm critical business functions and priorities

    b. Determine locally appropriate mitigations

    c. Prepare and test draft Pandemic Response Plans

    d. Assist employees with family care plans

    e. Manage work continuation if a pandemic strikes

    f. If NAES corporate management is not available, plant managers shall take control

B. Employee Responsibilities

1. *Perform critical department work if a pandemic strikes*

2. *If management is not available, senior personnel will provide leadership*

3. *Remain individually healthy by following guidelines*

4. *Review family care outlines and websites; prepare a family response plan and discuss with family members*

5. *Stockpile essential supplies*

3. Pandemic Response Plan Development

This section will provide guidelines for corporate departmental planning to meet the challenges of an influenza pandemic. Various charts and tables are provided throughout this section for planners to use during these assessment processes. Some limited information (typically applicable to power plant operations) has been included in these tables for demonstration purposes, but each organization shall develop a site-specific Plan by filling local information into the various assessment tables provided in this Section. Any text that is highlighted in yellow in these tables has been inserted only as an example of a possible data entry.

A. Business Processes Assessment

In planning for a potential Pandemic, it is important to identify the major business processes in the organization. It is also important to determine the critical inputs that are needed to accomplish those processes. Other departments in the company may depend on some of your organization's output to do their work. The most important outputs should also be defined.

As you identify critical inputs and outputs, consult with upstream and downstream organizations. They may have priorities that are different from your own and negotiation with them may be necessary. Critical information should include Contact Lists, Vendor Lists, etc. To set the Priority Ranking, #1 is for most important, and #5 is for least. For example, the critical business functions needed for the business to survive should be in the #1 category.

The following "Major Business Functions" assessment chart is recommended as a starting point for the NAES Pandemic Management process. Several follow-up assessment charts are shown on the ensuing pages.

Major Business Functions

Major Business Processes	**Priority Ranking**	**Critical Inputs and Outputs**
Power Generation	1	Fuel supply, utility grid connection, utility grid integrity, etc
Operations CRO OMT	 1 1	 Plant Operation
Maintenance	4	
Administration	5	

B. Pandemic Risks Assessment

Once the major business processes have been identified, it will be important to determine what the largest risks to those functions are. What problems would be caused by loss of key staff inside or outside of the company (loss of key department personnel, loss of vendors, bankruptcy of a large customer, stock market crash, late or no payments, inability to communicate with other businesses, failure of service providers, etc. Once these largest risks are determined, appropriate mitigation strategies can be established.

Largest Risks

Major Business Processes	**Largest Risk (Internal & External)**	**Priority of Risk**
Power Generation	Loss of Personnel	1
Operations		
CRO	Loss of Personnel	1
OMT	Loss of Personnel	1
Maintenance	Loss of Personnel	4
Administration	Loss of Personnel	5

C. Loss of Key Personnel

1. For Influenza Pandemic Only

This case differs from the normal Business Continuity case because all the supporting departments and vendors that the department might call upon in an emergency will also be having a personnel shortage. This means many more vendors will be needed, more work must be cancelled or postponed, and more drastic measures to protect the remaining employees must be taken.

Recovery Strategies

Major Business Processes	**Recovery Strategies**
Power Generation	Personnel recover from illness
Operations	Personnel recover from illness
Maintenance	Personnel recover from illness
Administration	Personnel recover from illness

2. For Influenza Pandemic with Emergency Succession

In the following table, identify key persons doing critical work for each major business function. These key people are those persons without whom, the Major Business Function could not be done. This might be a senior department employee, group leader or supervisor.

After naming the current key personnel, enter the name(s) of the person(s) that could take over the work in an emergency where the current key person is not available. In other words, this table is an emergency succession plan for the work that is most important to the company.

Key Personnel and Critical Functions

Major Business Processes	**Key Person(s) & Emergency Alternate(s) for Organizational Assignments**
Power Generation	Operations Supervisor/ Maintenance Supervisor
Operations	CRO/OMT
Maintenance	Maintenance Supervisor/ Operations Supervisor
Administration/Warehouse	On Site HR Manager
Other	

D. Employee Critical Skills Inventory

Use the table below to list your personnel who have skills in high demand critical areas that could fill in for others in an emergency. The table lists some typical skill sets for plant operations but should be modified as needed for the skill set categories that suit your department's needs.

Critical Skill Inventory

List of Employee Names	Critical Skill Sets						
	CRO	OMT	Mechanical Skills	Electrical Skills	Plant DCS	Other PLC	Ware-house
Roger Lee		X	X				
Woody DeBenedictis			X	X		X	X
Clyde Mahan	X	X	X				
Ron Dennison	X	X	X				
Pat Daly	X	X	X				
Ryan Moore		X	X				X
Jacob Webb	X	X	X	X		X	
Joel Ayala	X	X	X	X			X
Kyle Miller		X	X				
Corbin Gilbert		X	X				

E. Information Systems (IS) Inventory

1. Critical Systems

Use the table below to list the critical Information Systems and IS Applications which are essential to the most important work done in the department. The following acronyms used in this table are defined as:

a. RTO (Recovery Time Objective) - The period of time within which systems, applications, or functions must be recovered after an outage.

b. WRT (Work Recovery Time) - The period of time needed to complete the disrupted work on a recovered/repaired resource in order to return it to normal operational status.

Work Recovery Time

Critical Business Functions	Critical Business Processes	Critical IT Systems and Applications	RTO	WRT
Operations	Maintain Plant Control	Plant DCS	1.5 Hr	1 Hr

2. Loss of Software, Hardware or Data Assets

Use the table below to help list hardware loss strategy. In the event that your critical IT Systems and Applications are not available, what is your strategy to continue work? Would you use a simple Excel spreadsheet to record and manipulate data until the main application was restored? Would you use another application that could do some of the important functions? Is there an old or newer program that would work? Would you cease work? Are there any other relevant questions?

Information Systems (IS) Recovery Strategies

Major Business Functions	Loss of Systems	Emergency Software Recovery Strategies
Operations	Plant DCS	No Replacement available, Software needs to be reloaded
Operations	PLC	No Replacement available, Software needs to be reloaded

3. Recovery of Lost Software, Hardware, or Data Assets

Assume that the loss of Software, Hardware or Data Assets scenario has occurred and the recovery team has been activated. The general strategy from the previous sections applies but more detail is needed to describe the steps that would be taken.

In the following table, replace the example by listing the detailed tasks that must be initiated and indicating which member(s) of the recovery team (e.g. team leader, team member, or names of individuals) will perform it.

Detailed current backups of the following software and systems are maintained on file in a fireproof cabinet in an area separate from the main control area:

Detailed IS Recovery Strategies

Major Equipment	**Contact**
Plant DCS	Plant Manager
PLC	Plant Manager

4. Pandemic Plan Validation

Identify the known gaps, issues and problems with this Pandemic Plan that would make it difficult to succeed, contribute to its failure or make the recovery from a significant event slower and less efficient. Identify the expected time frame to eliminate these problem areas. If an economic, time related, organizational or technical issue is causing the gap, include the description of this cause. Describe the gaps in order of importance, with the most important one listed first.

5. Qualified CROs

a. Long term action is to get APOs sufficiently trained and qualified to fill in as CROs.

b. Cross training of plant personnel is required for better flexibility.

6. Limited Vendor Resources

a. Resources critically tied to interstate transportation. These include lime, soda ash, hydrogen, caustic, acid, and ammonia.

b. Some staff may not be from the local area. This makes alternate transportation more difficult and timely relief for ill personnel may not be readily available.

4. Threat Mitigation - General Guidelines

The purpose of a Pandemic Management Program is to assist NAES plant management in preparing for a potential pandemic by developing plans to manage the threat. The actions listed below could be taken by all departments to help them minimize the impact if the pandemic threat becomes real.

A. Review existing emergency plans. Update these and inform essential personnel.

B. Update the contact list of all employees in your department. Include after-hours contact number(s); some of these phone numbers may be out of this region, such as parents, or other family members or friends.

C. Identify employees and key customers with special needs, and incorporate the requirements of such persons into your preparedness plan.

D. Consider the impact of community containment measures and quarantines, school and/or business closures, and public and financial institution closures.

E. Expand the use of teleconferencing and videoconferencing to limit the frequency of meetings and other types of face-to-face contact.

F. Implement guidelines to modify the frequency and type of face-to-face contact (e.g. hand-shaking, seating in meetings, shared workstations) among employees and between employees and customers.

G. Train and prepare ancillary workforce (e.g. contractors, employees in other jobs or other departments, retirees, etc).

H. Develop cross training programs to assure adequate staffing of essential functions; consider strategies such as developing "job sheets" that outline key activities by position.

I. Consider a transportation plan in case of fuel shortages and loss of public transportation.

J. Develop a plan to send home non-critical staff and shift workers to home offices or other sites or change work hours that would minimize exposure risks, address potential fuel shortages, and curtail dependence on public transportation.

K. If services are contracted to outside organizations, contact vendors and find what type of contingency plans they may have in place.

L. Consider the impact of a disruption of social systems and services on your organization (assume the possibility of no response or slow response from emergency first responders, other basic services not available, etc.)

5. Mitigation Strategies

There are several possible risks and mitigations to be considered when planning your strategies. Appendix A contains a listing of the most common risks and the associated mitigations. Each specific facility or department may have more or different risks than those listed in Appendix A.

A. Protect Work Force

1. Protect the workers that you have.
2. Provide the personal protective equipment that may be needed.
3. Minimize meetings and face to face contact.
4. Wherever possible, get priority medical treatment arranged.
5. Provide essential medical training for on-site emergencies.
6. Gather essential health and protective equipment.
7. Gather the contact phone numbers for your employees and their "out of area" contact numbers.
8. Be prepared to have an alternative way to transport essential employees to work or locations where they can work.
9. Consider the impact of civil unrest and a breakdown in social order if police, fire and other personnel are not available. How will you protect your work site and employees?
10. Should you be prepared for some employees to live on the work site for several days or weeks?

B. Help Employees Protect Their Families

1. Provide information so employees can protect their families and can feel free to work.
2. Provided the personal protective equipment that may be needed.
3. Counsel employees that need help coping with illness or losses.

C. Augment the Work Force

1. Broaden the vendor base in type and geographic area.
2. Gather the contact phone numbers for your vendors and their after-hours contact numbers.
3. Ask that your most critical vendors also have and carry out Pandemic Planning and Mitigation.
4. Ask to see their plans and be briefed on them.
5. Identify groups of additional workers from other departments, retirees, employment agencies, etc. The lists should be long and geographically diverse.

D. Protect Work Processes

1. Be prepared to alter your work process and use alternative methods. Your normal software may become disabled due to routine failure and there may not be personnel to get it repaired. Your software or application recovery may not be on a high priority list.

2. Cross train your personnel to be more generalists rather than specialists so they can support and stand in for each other.

3. Is it possible for vendors to help with more routine work or to outsource the some of the work?

4. Buy, write or update procedure or instruction manuals so that a broader segment of the department could do the work. Train the work force on these procedures.

5. Maintain essential data on backup CD-ROMs or other sources. Make sure several people know how to access this data.

6. Move some processes away from "just in time" methods. The "just in time" processes might collapse when critical materials or data are not available. Some stockpiling or source diversification may be necessary.

7. How will you work if the city or state is broken up into quarantined areas?

8. Have a current and workable succession plan.

E. Stockpile Resources

1. Stockpile critical materials (parts, supplies, protective equipment, routine but necessary supplies, fuel, etc.)

2. Consider alternative transportation methods to get workers to and from work.

3. Consider storing bottled water, canned goods, and emergency meals. Include flashlights, batteries, radios, masks, disposable gloves, soaps and disinfectants.

F. Reduce Non-essential Work

1. Each department should identify its most critical business functions and the overall mitigation strategies for them. Determine what lower priority work to cut.

2. Each department should determine its essential inputs needed for its work and the critical outputs that others need for their work.

3. Reduce work to the most important tasks.

4. Reduce personal contact and make essential contact safer.

5. Have people work from home where possible.

6. Reduce or "sanitize" customer contact.

7. Teach proper hand washing, use of sanitizing wipes, use of disinfectant soaps, proper use of effective masks and gloves and other personal protective measures.

8. Teach people how to handle potentially contaminated material from other people.

G. Develop Communication Plans

1. What are the essential information data and messages that need to reach employees, vendors, their families, customers and the public.

2. What is the structure of these messages, what is the likely content that is needed?

3. Develop specific, honest, timely and helpful messages that give the whole, unvarnished truth. Have these messages available and ready to fill in the blanks.

4. Have enough people to do the information gathering and to do the communication.

5. Test the messages on people outside of the communications department. Are the messages clear and do they give the intended information?

6. What alternative ways will the company use to communicate if normal services are not available? Can Webcasts, internet sites, phone recordings, or other sources be of help?

Matrix of Major Risks and Mitigations

Description of Major Risks/Problems	Recommended Mitigation Options
Loss of Key Personnel (for up to several weeks)	Identify critical/non-critical functions Cross training Temp/contract workers/retirees/students Documentation of processes
Supply Chain • Fuel Storages • Lack of transportation • Supplies/Materials/Equipment Storages	Partner with vendors on continuity plans Alternative sources Stockpiling Continuity plans for employee transportation Continuity plans for power plants Hygiene supplies (hand soap, disinfecting agents, PPE)
Human Resources/Healthcare • Employee/customer special needs • Policies • Insurance • Personal Hygiene • Public Health • Family Care	Establish policies for: Preventing influenza spread Sick leave unique to pandemic Flexible work hours Travel Increased medical insurance claims Establish communications with healthcare facilities to promote information on prevention and treatment of influenza.
Communications • All aspects of communication • Family Care	Beware of assurances of safety Explain new policies & procedures Educate workforce regarding conditions and risks Develop an emergency communications plan that includes key contacts, back-ups, medical contacts, communication chains, and processes to track and communicate business and employee status. Provide websites that contain vital information.

Description of Major Risks/Problems	Recommended Mitigation Options
IT/BTS • Infrastructure capabilities	Put in place plans to have an increased number of employees work from their home. Ensure IT system infrastructure can support this action.
Mail Delivery • Reduced or Non-existent service • Contaminated mail	Treasury, Payroll, and A/P need continuity plans.
Contractual Obligations • Labor Unions contracts may need to be amended • Unable to perform under existing conditions	Contract analysis Limits of liability Best efforts clause Impossibility exclusion Exclusivity provision
Security	Consider security issues and the limitations that law enforcement agencies will face during an influenza pandemic.
Regulatory	Work with regulators to ease restrictions if necessary.
Face-to-face Exposure	Utilize videoconferencing and teleconferencing Telecommuting capabilities Workforce separation Shift work Device an alternative to customer/employee contact

Critical Equipment and Materials

Equipment & Materials	Intended Users	Needed Upgrades or Special Features	Equipment Supplier	Recovery Quantity	Rebuild Quantity
N/A					
COMMENTS:					

Vital Records Access and Storage

Media Types: E – Electronic, P – Paper, M – Microfilm/fiche

Key Business Process	**Associated Vital Records Required for Process**	**Media Type (E/P/M)**	**Vital Record Storage Locations and Access**
Operations	Power Production Agreement	P	Administrative Office
Operations	Employee Health and Medical Records	E, P	NAES HQ Personnel Office
COMMENTS:			

Plant-Specific Manuals and Procedural Instructions

Media Types: E – Electronic, P – Paper, M – Microfilm/fiche

Title of Manual or Procedure	Description	Storage Location	Media Type (E/P/M)	Quantity Available
PHR Safety Manual Procedures (SMPs)	Safety Manual	Library Server G Drive	3-ring Binders (P) SMP .doc files (E)	2 copies
COMMENTS:				

Employee Contact List

Employee Name	Mobile/Cell Telephone	Alternate Contact	Alternate Telephone)	Street Address (description)
Ayala, Joel	[redacted]			
Daly, Patrick				
DeBenedictis, Woody				
Dennison, Ronald				
Gilbert, Corbin				
Lee, Roger				
Mahan, Clyde				
Miller, Kyle				
Moore, Ryan				
Webb, Jacob				
Wilson, Destini				

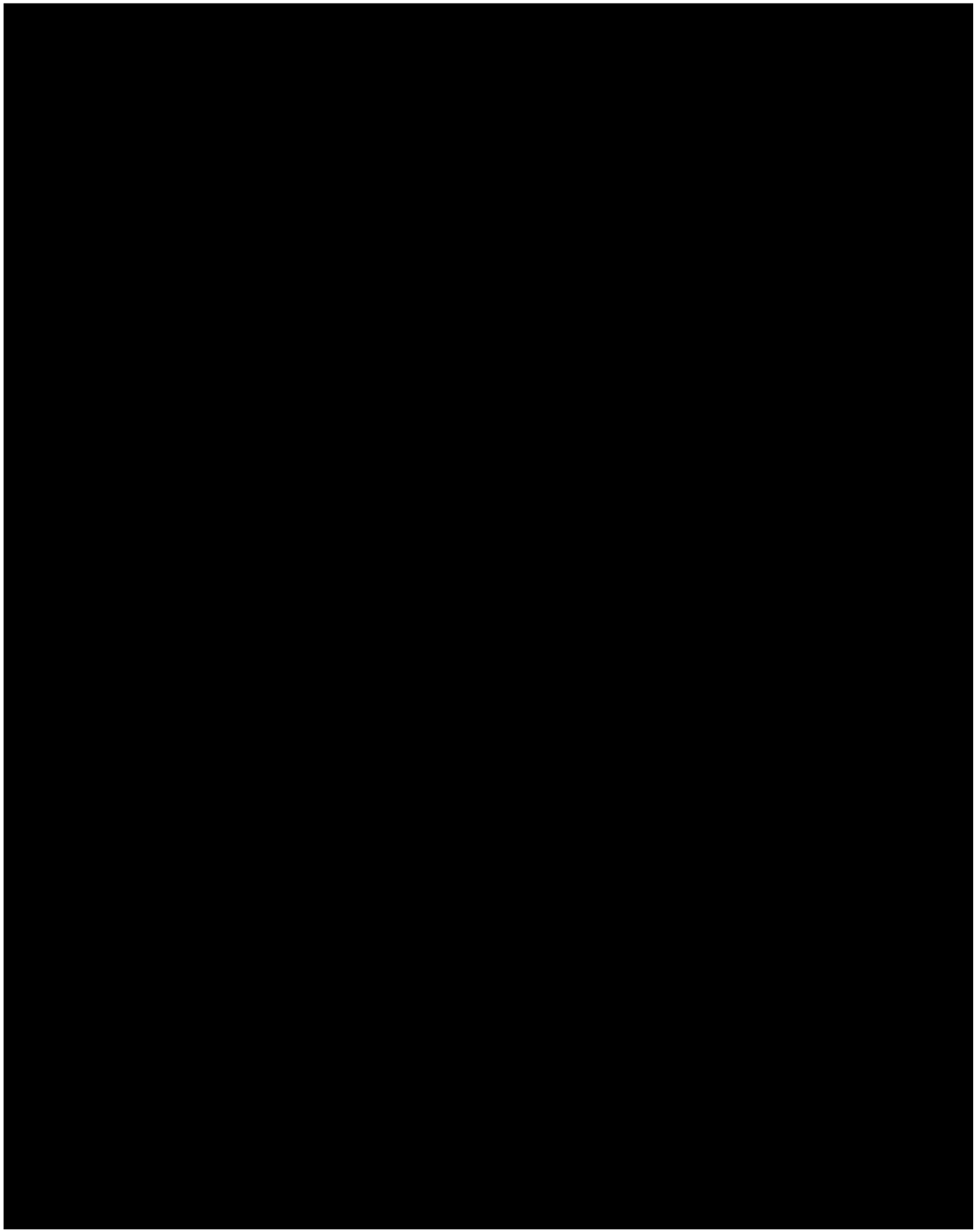
Emergency Contacts List

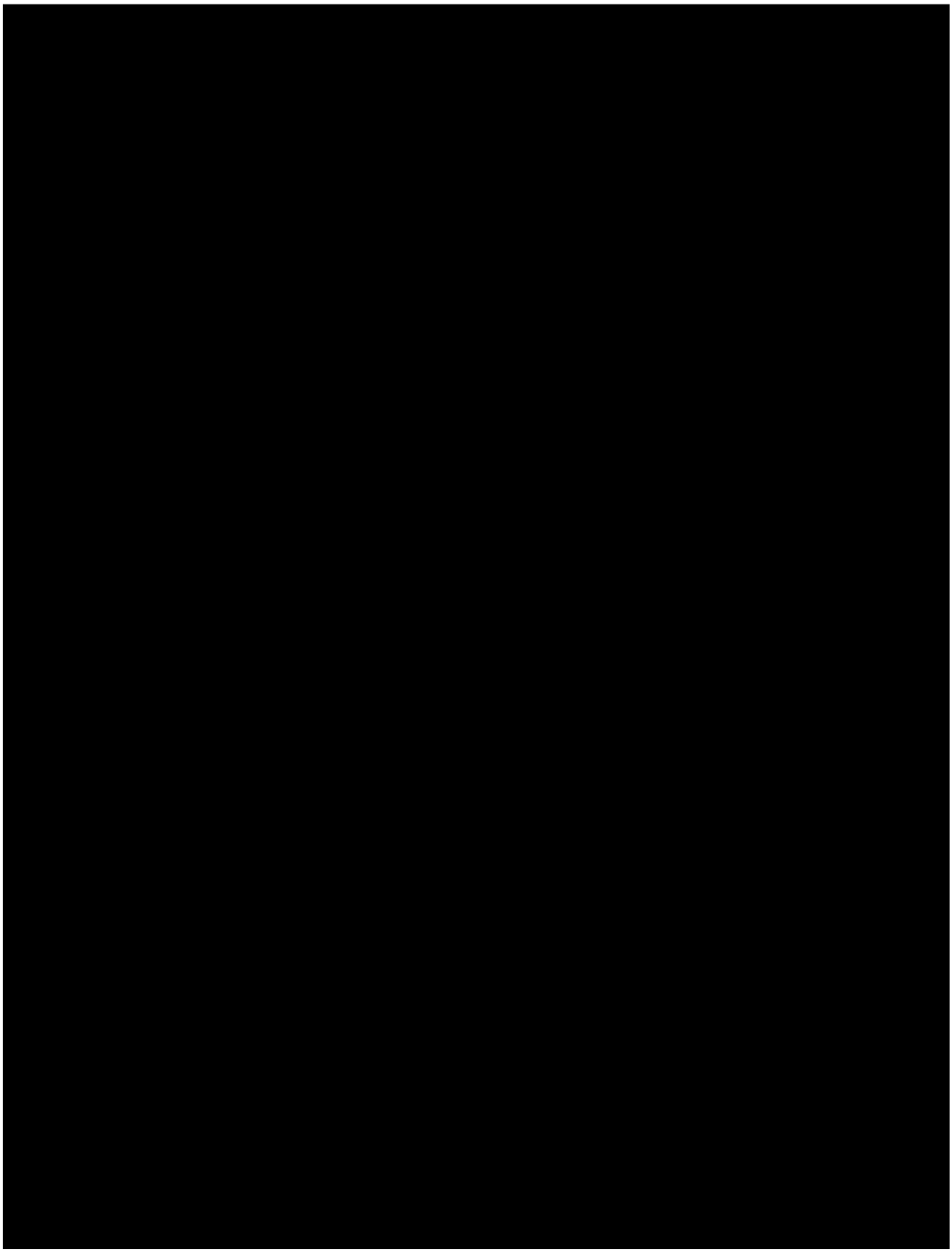
Organization	Emergency Telephone	Business Telephone	Street Address or Website	Comments
PUBLIC SAFETY SERVICES				
Local/City Fire Department	911			Available 24 x 7
Local/City Police Department	911			Available 24 x 7
County Sheriff's Office	911			Available 24 x 7
State Police Office	911			Available 24 x 7
Local Emergency Operations Center				Available 24 x 7
American Red Cross	(800) 733-2761		http://www.redcross.org/	Available 24 x 7
National Poison Control Center	(800) 222-1222			Available 24 x 7
Local Hospital Emergency Room				
Local Hospital Emergency Room				
EMERGENCY BUSINESS SERVICES				
NAES HQ	(425) 961-4700		http:/www.naes.com	

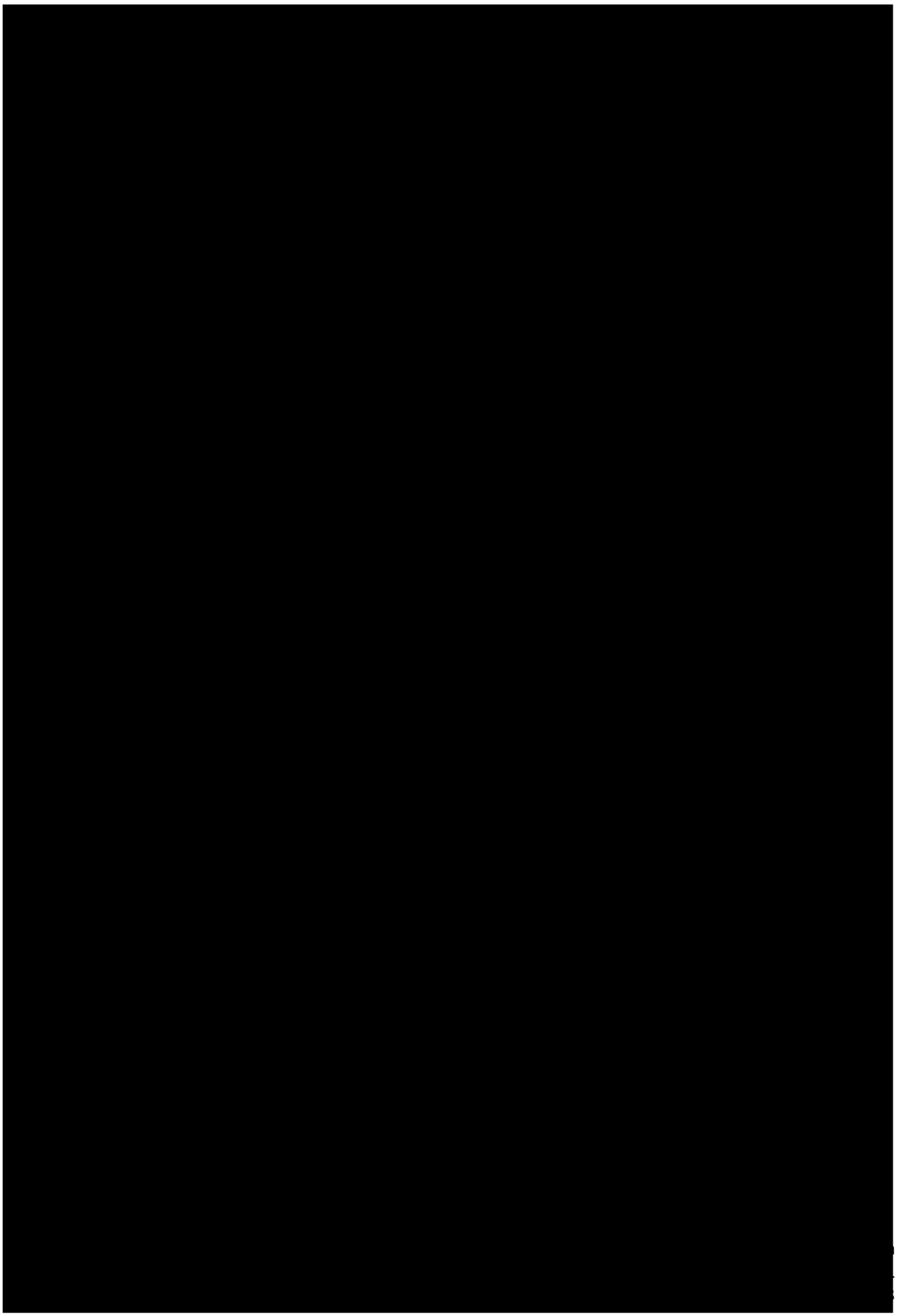
Emergency Information Resources

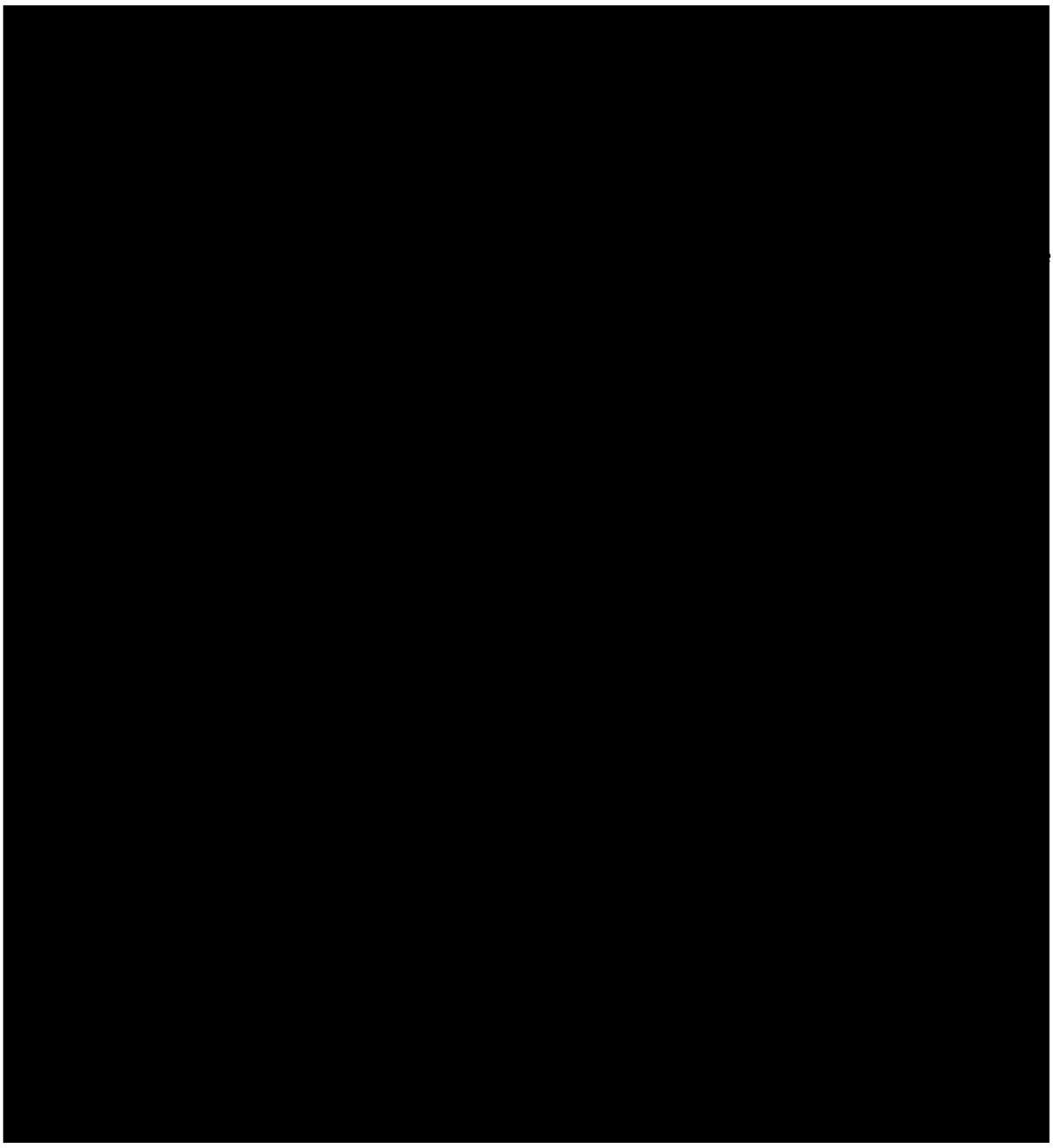
Organization	Emergency Telephone	Business Telephone	Street Address or Website	Comment
Radio Station KWI958		281-309-5002	1353 FM646, Dickinson, TX 77539	FM -155.265 MHz
Local Newspaper		409-683-5200	https://www.galvnews.com/	
Public Service Agency		409-762-8621	https://www.galvestoncountytx.gov/	

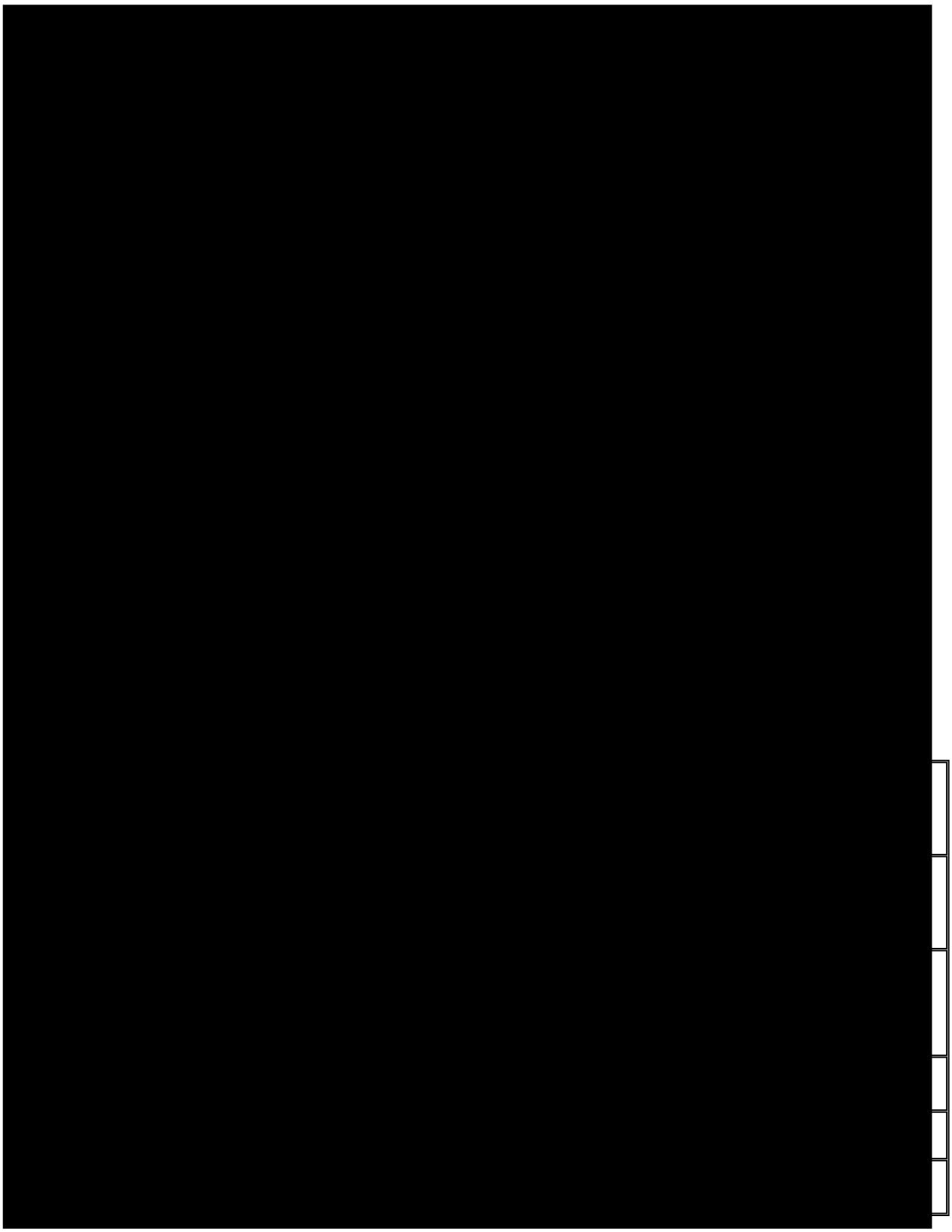
H. CIP-003-8 Cyber Security Policy



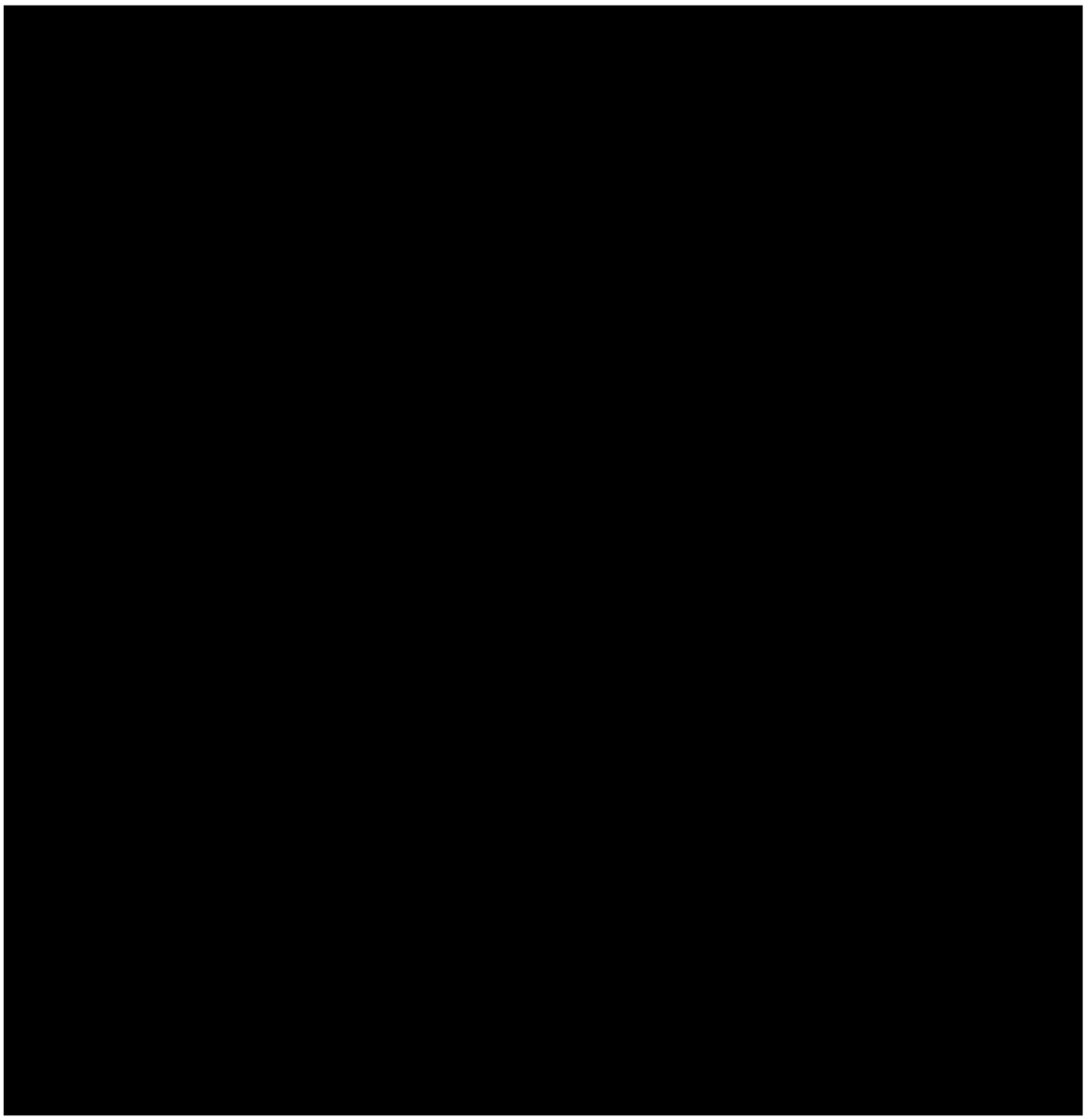


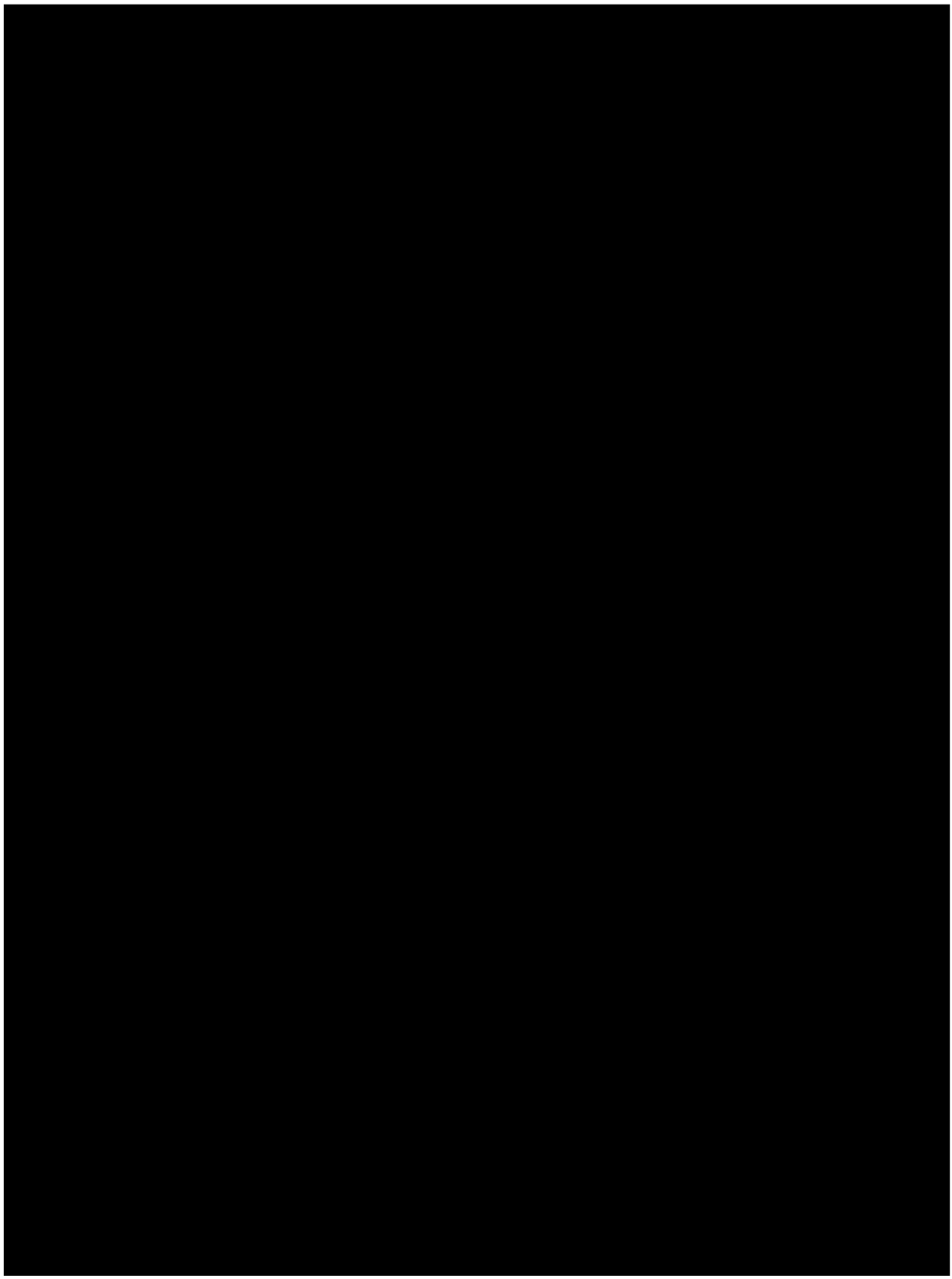


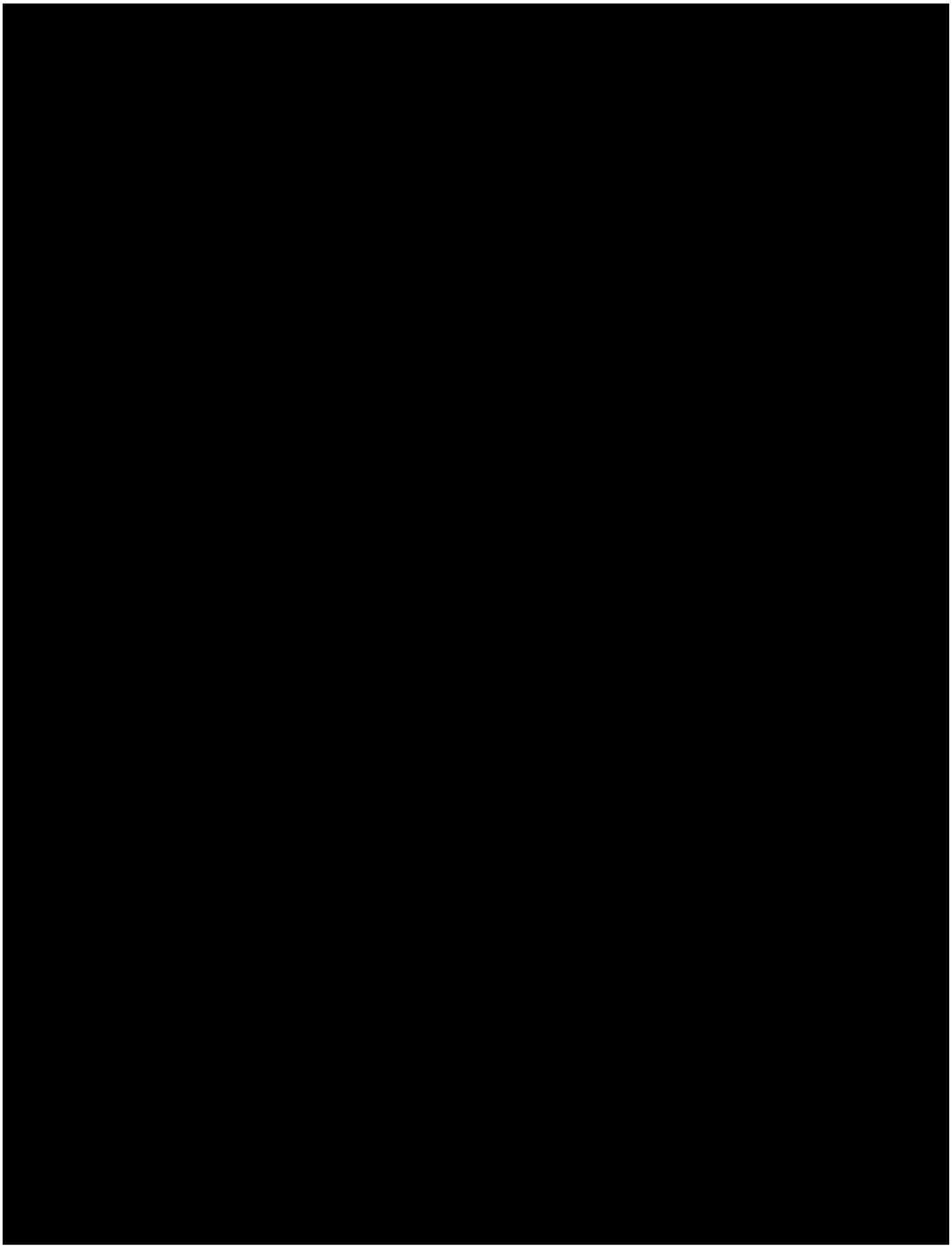


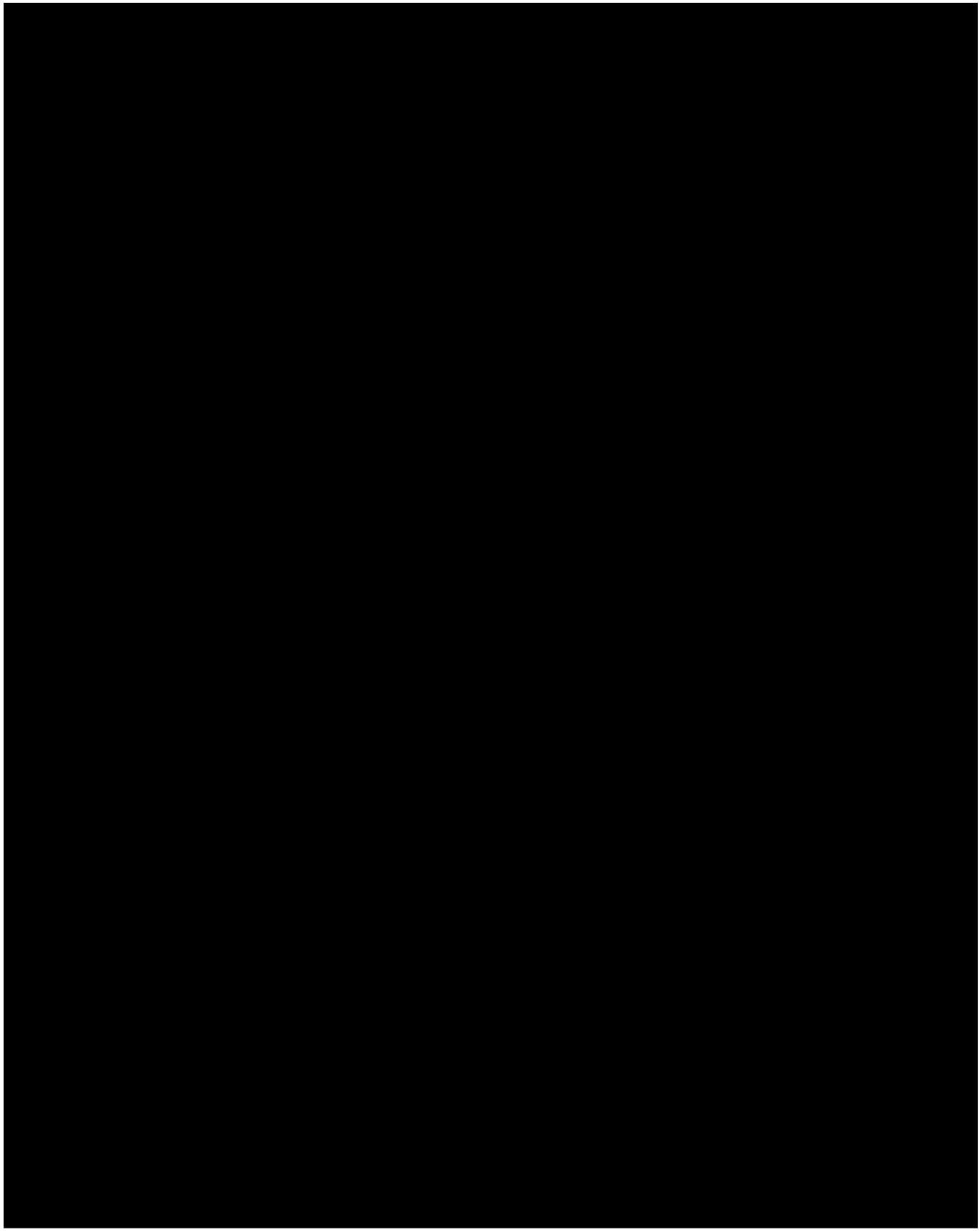


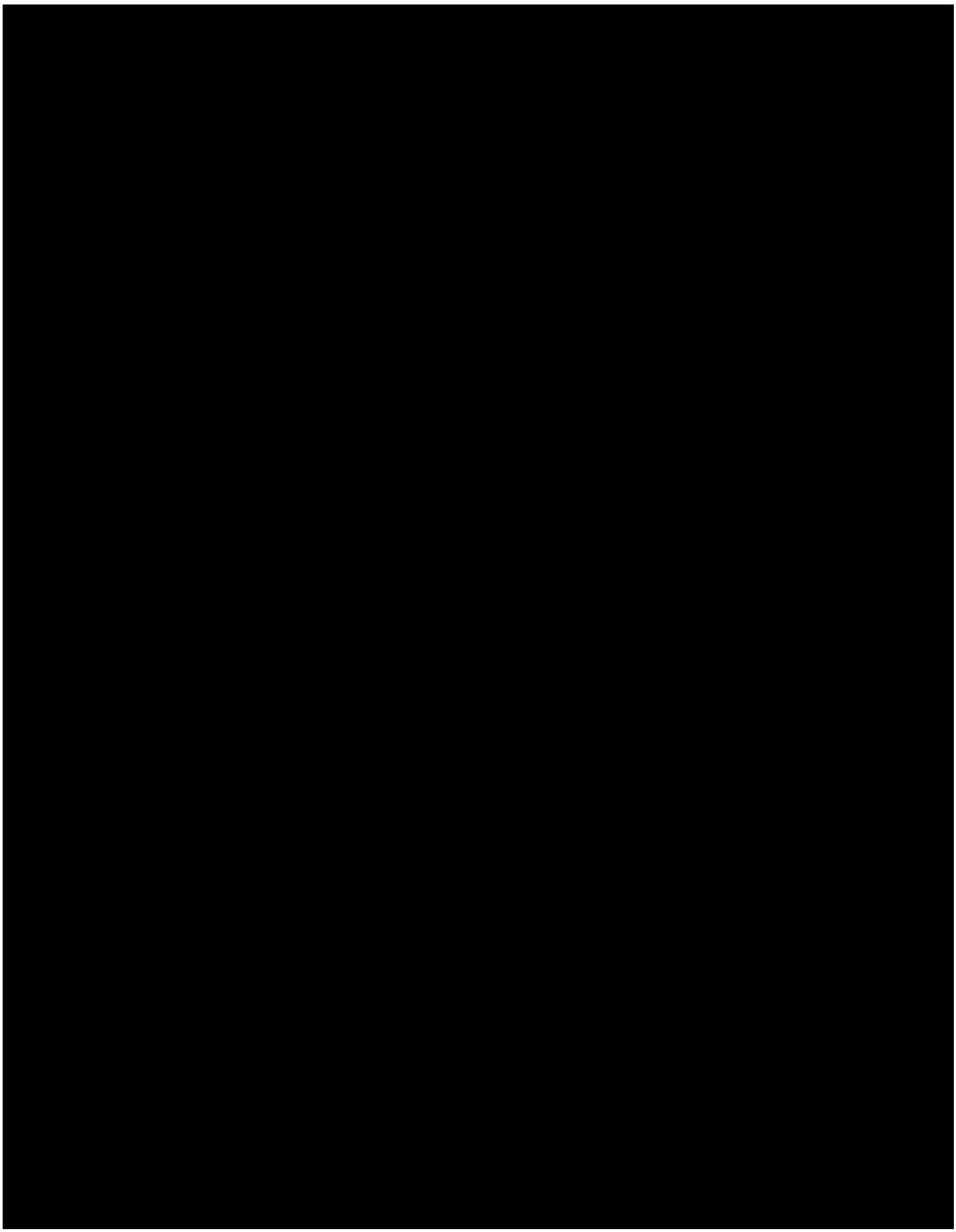
I. CIP-003-8 Cyber Security Incident Response Plan

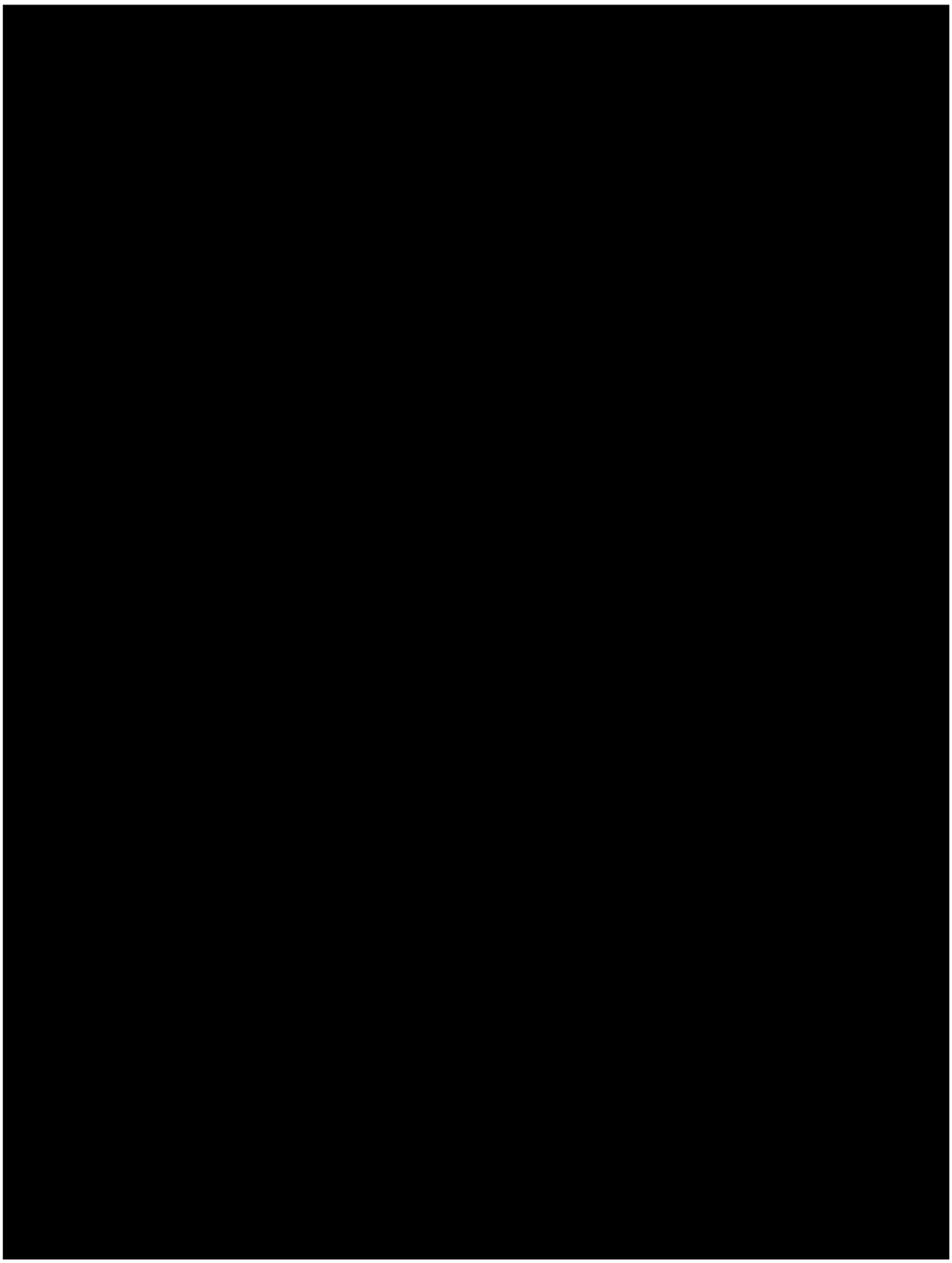


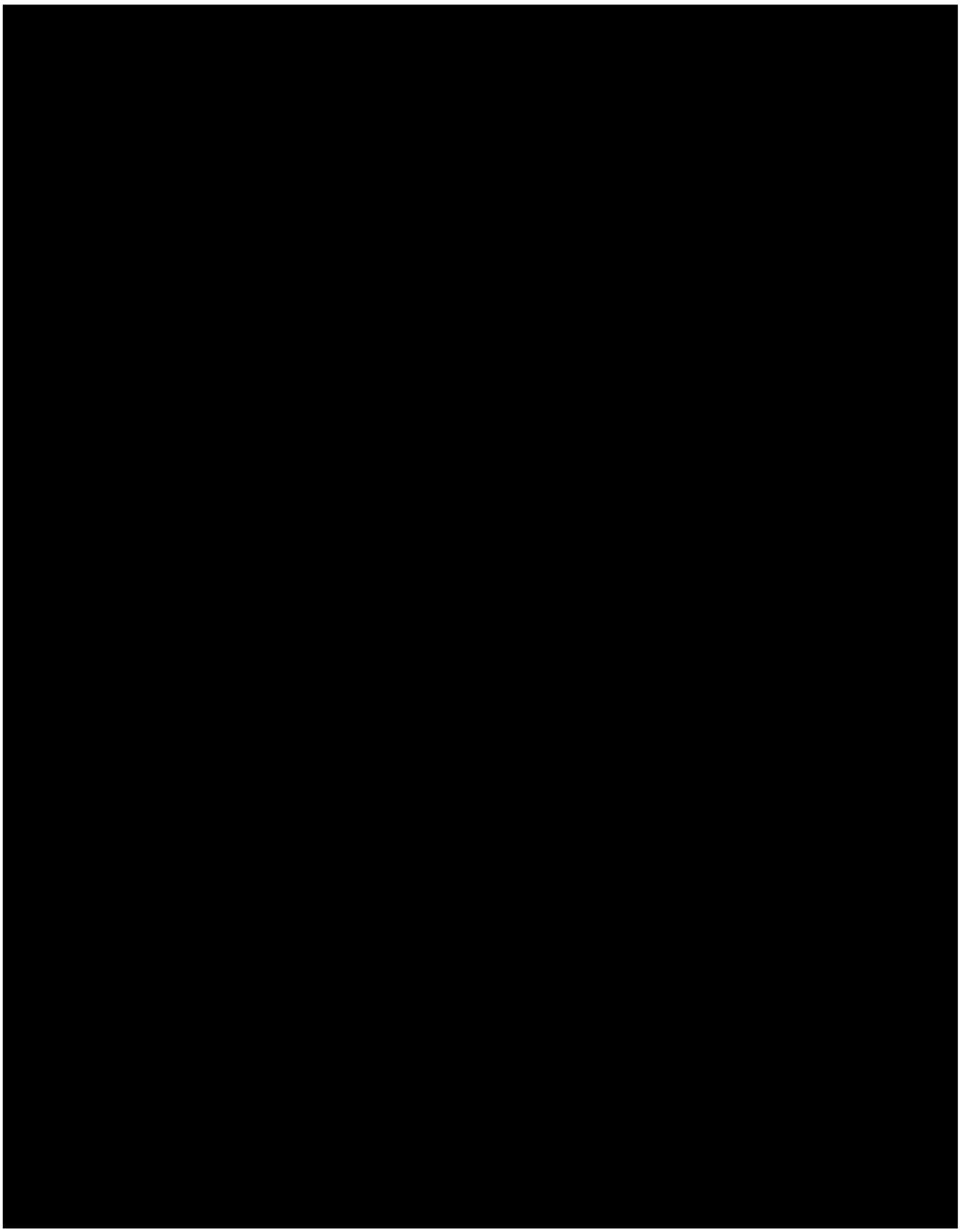


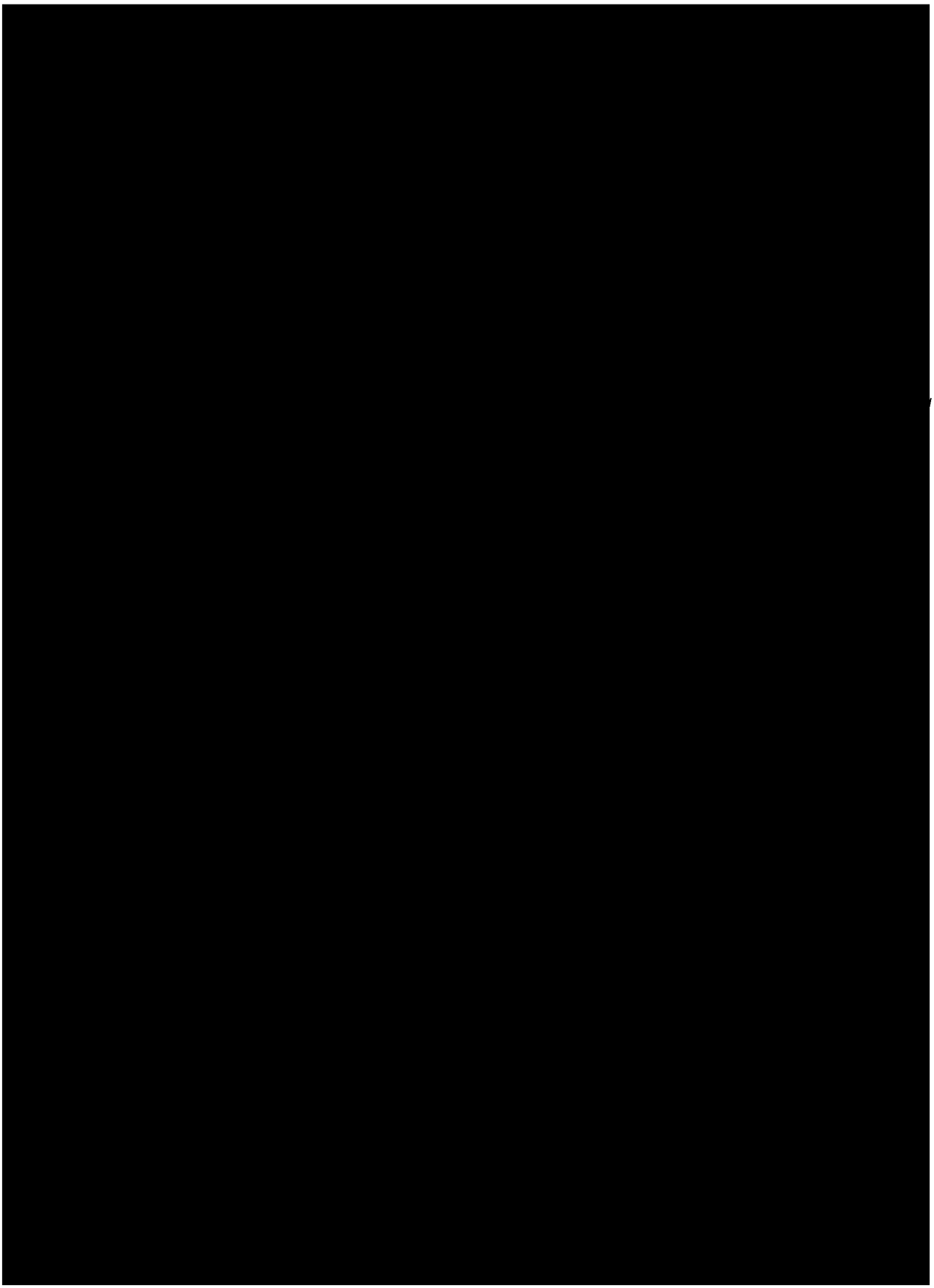




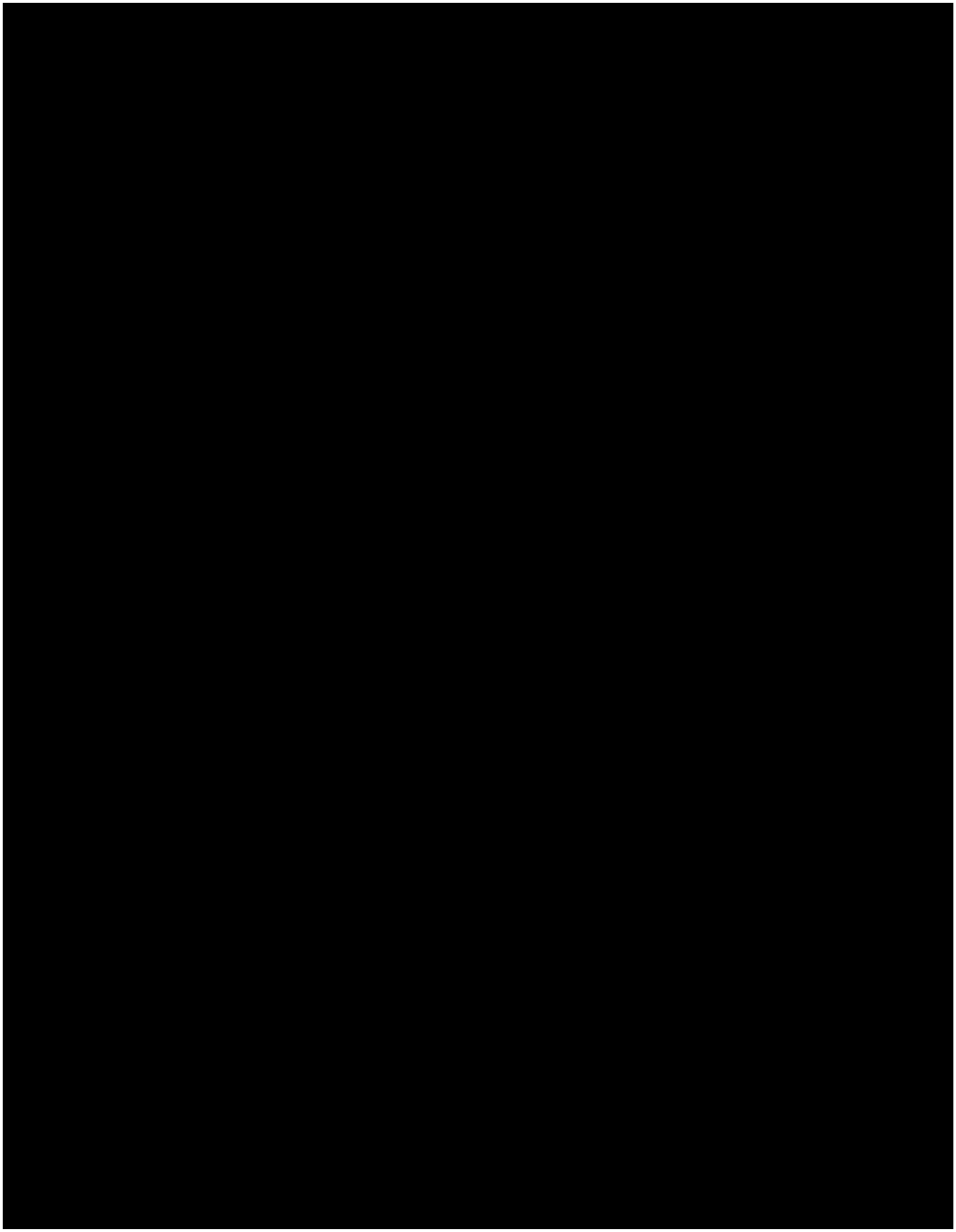


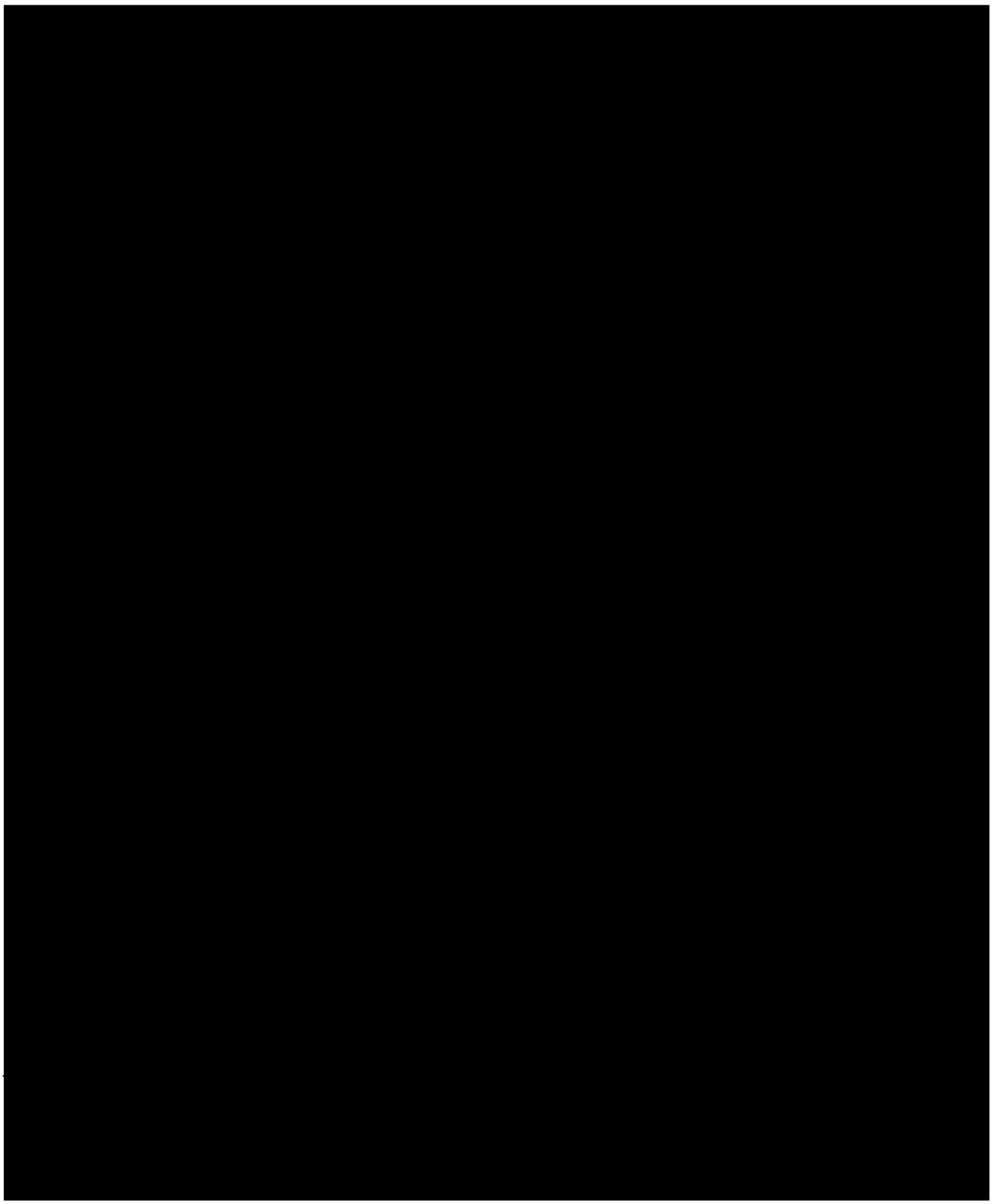


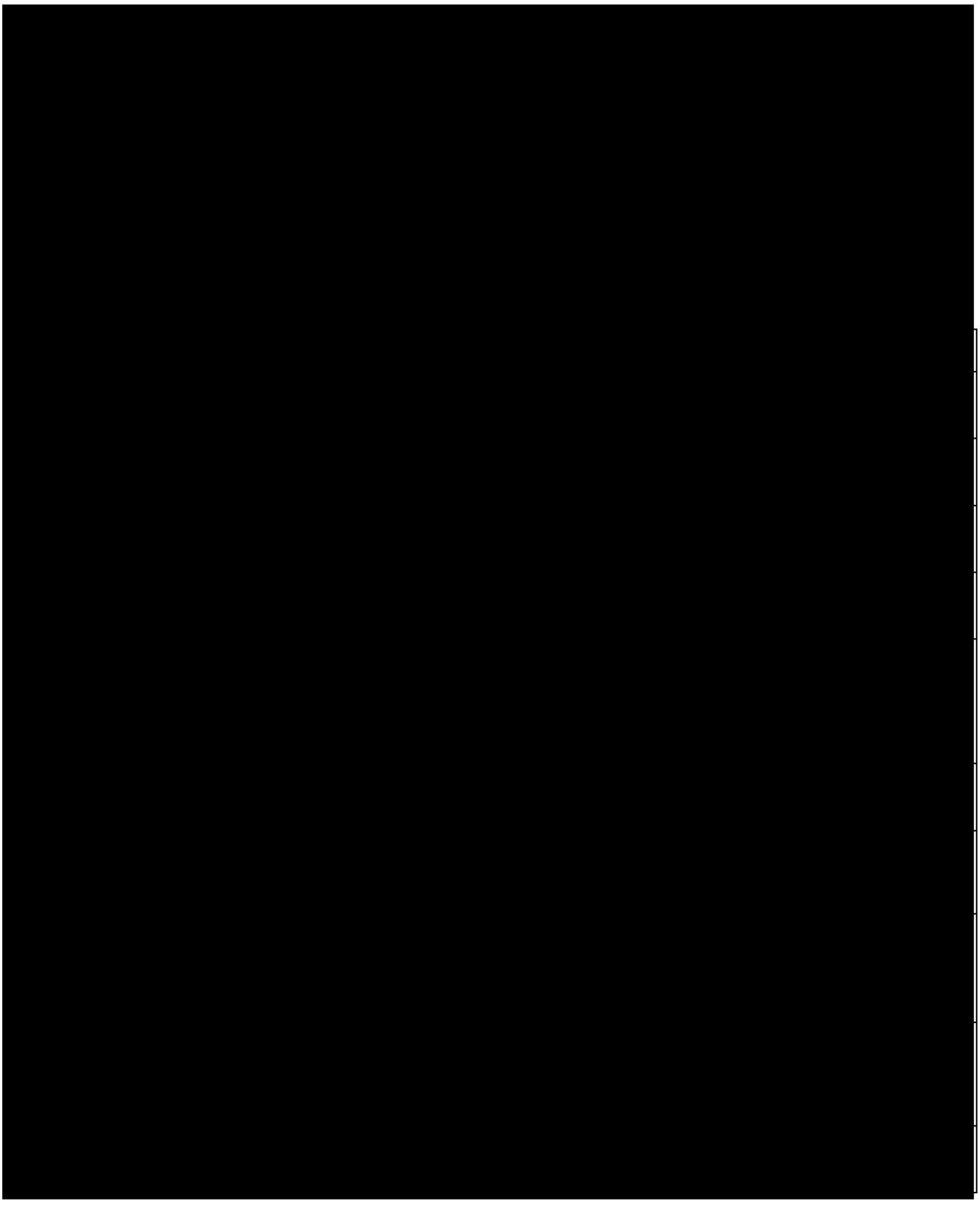




J. Business Continuity Plan







K. Return from Black Plant Procedure

Returning From Black Plant

This procedure is to be used for the return from black plant.

PROCEDURE

-Remove all locks from the lockbox

-Once all locks are off, remove all LOTO points, but leave them in their current state.

-Take all units off turning gear

SWITCHYARD

NOTE: These steps are being done while the generator is still supplying power to the 480V BOP MCC and 480V supply to the PEECCs to reduce the time that the plant is in the black. Since breakers M3 and M4 are open the power from the generator and the power from the switchyard will not be connected. M3 and M4 will only be closed after power from the generator is no longer being applied to the main bus by opening the BOP MCC Feeder breaker.

-Close switches LO21, LO41, and LO61

-Close switch LO26 (also sometimes referred to as LO25 or 0926)

-Verify line voltage coming from Centerpoint

-Turn on trip and close coil breakers for LO20, LO40, and LO60

NOTE: These breakers are located above the pistol grip control switches for LO20, LO40, and LO60 at the very top

-Verify no one is in the switchyard

-Pull out on the pistol grip for LO20 to remove it from the trip and hold position

-Close LO20 using the pistol grip control switch

-Go to the switchyard and verify all 3 phases of LO20 say closed

-Pull out on the pistol grip for LO40 to remove it from the trip and hold position

-Close LO40 using the pistol grip control switch

-Go to the switchyard and verify all 3 phases of LO40 say closed

-Pull out on the pistol grip for LO60 to remove it from the trip and hold position

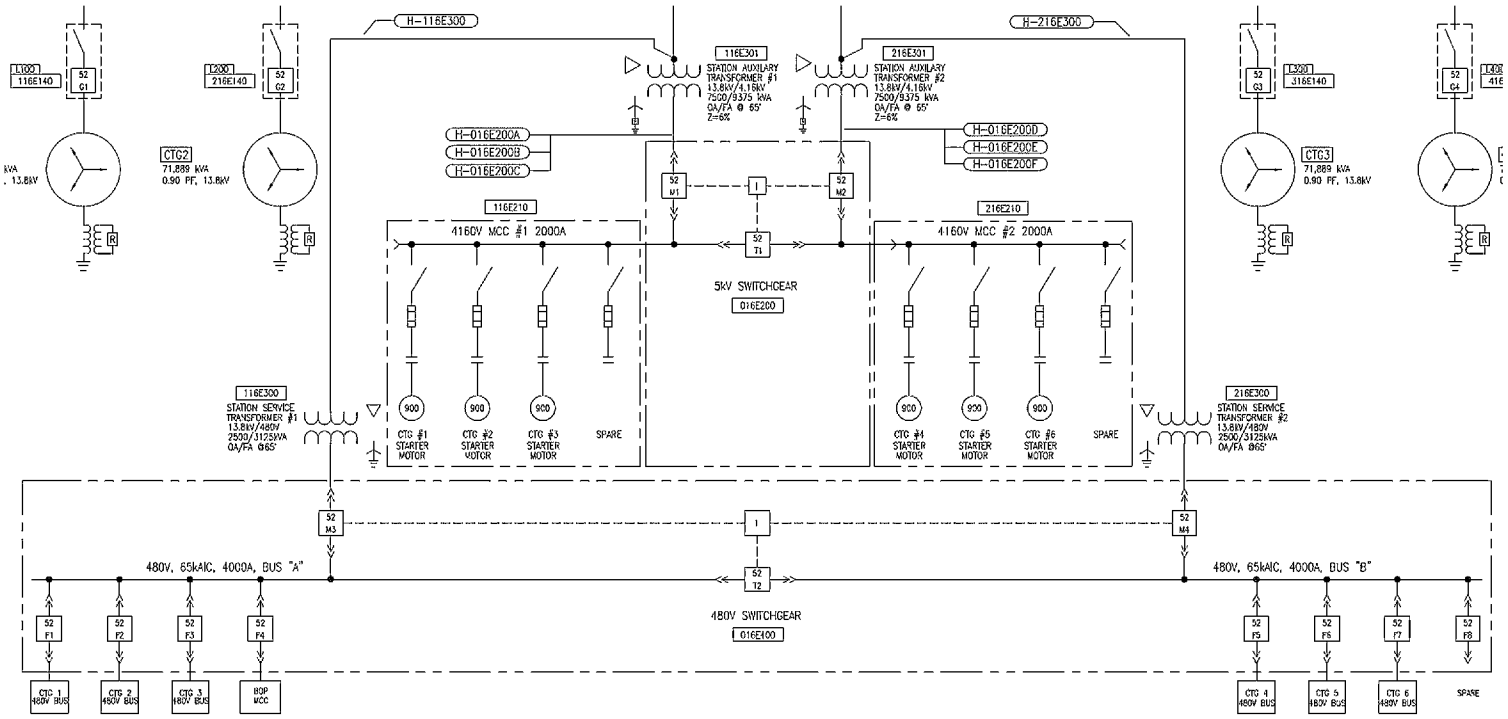
-Close LO60 using the pistol grip control switch

-Go to the switchyard and verify all 3 phases of LO60 say closed

4160 and 480 Volt MCC

NOTE: Blue shows the incoming 13.8kV from the switchyard, yellow shows the incoming 480V from the generator, and orange shows the open breakers that are keeping the generator and switchyard power from meeting.

-Open BOP MCC Feeder breaker and verify that CT1-6 PEECCs have lost power



-Open CT1-6 Feeder breakers

NOTE: Since there is no power to the breakers this takes away the arc flash potential

-Charge CT1-6 Feeder breakers using the handle

-Charge M3 and M4 breakers if not already charged

-Verify on M3, M4, and CT1-6 PEECC Feeder breakers that the yellow tab on the front says charged.

-Open 480V Tie Breaker T2

-Verify that Sync Selector Switch is set to Trip Tie

-Verify that Sync Selector Mode is set to Manual

-Open generator breaker and verify loss of power to BOP MCC

-Use proximity voltage detector to verify that there is no voltage on BOP MCC

-Use multimeter to check that there is no voltage on BOP MCC at the generator cable connection point. Ensure to check each phase to ground.

NOTE: Even though the proximity voltage detector said there was no voltage you want to verify with the multimeter in the event there is residual voltage that was too low for the proximity voltage detector to detect. The multimeter is a more sensitive detector of lower voltages and will also help to discharge any light static on the phase.

-Disconnect generator cables from the BOP MCC

-Once cables are disconnected from the BOP MCC place back the clear plastic piece that goes inside the BOP MCC door on the bottom left

-On breaker M3 verify voltage using the PQM

-Close breaker M3 and verify breaker operation

-On breaker M4 verify voltage using the PQM

-Close breaker M4 and verify breaker operation

-Close BOP MCC Feeder breaker and verify increase in amps on M3 PQM

-Close CT1 PEECC Feeder breaker and verify increase in amps on M3 PQM

-Close CT2 PEECC Feeder breaker and verify increase in amps on M3 PQM

-Close CT3 PEECC Feeder breaker and verify increase in amps on M3 PQM

-Close CT4 PEECC Feeder breaker and verify increase in amps on M4 PQM

-Close CT5 PEECC Feeder breaker and verify increase in amps on M4 PQM

-Close CT6 PEECC Feeder breaker and verify increase in amps on M4 PQM

-Verify 4160V Tie Breaker T1 is open. If not, then open T1

-On breaker M1 verify voltage using the PQM

-Close breaker M1 and verify breaker operation

-On breaker M2 verify voltage using the PQM

-Close breaker M2 and verify breaker operation

-Go to each PEECC and ensure all necessary breakers are on and check for alarms

-Place units back on turning gear

-Notify Dispatch that the units are ready for restart once power is restored