Section 11

2018 HURRICANE DUTY VOLUNTEER LIST

During a hurricane, a minimum crew of 8 members will be designated from the volunteers on the list. The team members are as follows:

Operations	**Alternates**
TBD	TBD

I&E

TBD

Mechanical

TBD

Management

Frank Wilson	TBD
Richard Davis	

Section 12

EMERGENCY SHUTDOWN PROCEDURE

Purpose:
This shutdown procedure is designed to give DPEC maximum time allowable for safe shutdown and evacuation if necessary and still give enough flexibility in our plan, to stay on line in case of change of direction or force of the incoming hurricane. In the event the maximum sustained winds are predicted to be greater than 120 miles per hour, and the hurricane's course is predicted within a 50-mile radius of Deer Park the following steps will be taken. It is important to monitor the NOAA weather radio broadcasts for updates during and after each step is taken in case of change.

Note:
Prior to starting shutdown contact Management.

CONTROLLED EMERGENCY PLANT SHUTDOWN for INCLEMENT WEATHER CONDITIONS

PRE-SHUTDOWN

The plant hurricane crew Operator III should make a round of the plant to verify equipment status and preparedness for Hurricane force winds. When winds are predicted to exceed 120 mph within a 50-mile radius notify SHELL and CALPINE ENERGY SERVICES (CES) at 12 hours prior to the impact of hurricane force winds that DPEC will begin a controlled plant shutdown. DPEC will begin a staggered plant shutdown. Coordination with Shell on timing of unit shutdowns will be critical during this period.

- Units 3, 4 & STG will begin ramp down at Hurricane minus 12 hours and be off-line by Hurricane minus 10 hours. (**Follow normal CT/HRSG Shutdown procedures that are attached, reference Toshiba manual for proper STG shutdown**) Make normal B.O.P. equipment adjustments as required. Verify Units 3, 4 & STG are secured and on turning gear.

- Unit 1,2 or 6 will begin ramp down at Hurricane minus 10 hours and be off-line by Hurricane minus 9 hours. (**Follow normal CT/HRSG Shutdown procedures that are attached**) Make normal B.O.P. equipment adjustments as required. Verify selected unit is secured and on turning gear. Initiate turbine spin cool procedures for the selected unit.(**Follow normal CT spin cool procedures that are attached**)

- Begin water treatment facility shutdown (**Follow water treatment shutdown procedures that are attached**) placing clarifiers in circulation through the multi-media filter with CWA make up valve secure. Shell must be contacted to coordinate the shutdown of the condensate system prior to shutting down the demineralization trains to prevent over heating of the resin.

- The second unit will begin ramp down at Hurricane minus 9 hours to be off-line by Hurricane minus 8 hours. (**Follow normal CT/HRSG Shutdown procedures that are attached**) Make normal B.O.P. equipment adjustments as required. Verify selected unit is secured and on turning gear. Initiate turbine spin cool procedures for the selected unit. **(Follow normal CT spin cool procedures that are attached)**

- When the final unit is off-line secure main gas isolation valves into the plant located in the gas yard. Shutdown all non-essential B.O.P and unit specific equipment and de-energize the breakers, including but not limited to main circulating water pumps, cycle water pumps, condensate forwarding pumps, cooling tower fans and boiler feed water pumps as system parameters allow for their shutdown.

- The emergency crew Operator III will notify Shell, CES and the local 911 dispatcher of our intent to evacuate the plant at Hurricane minus 6 hours.

NORMAL CT & HRSG SHUTDOWN

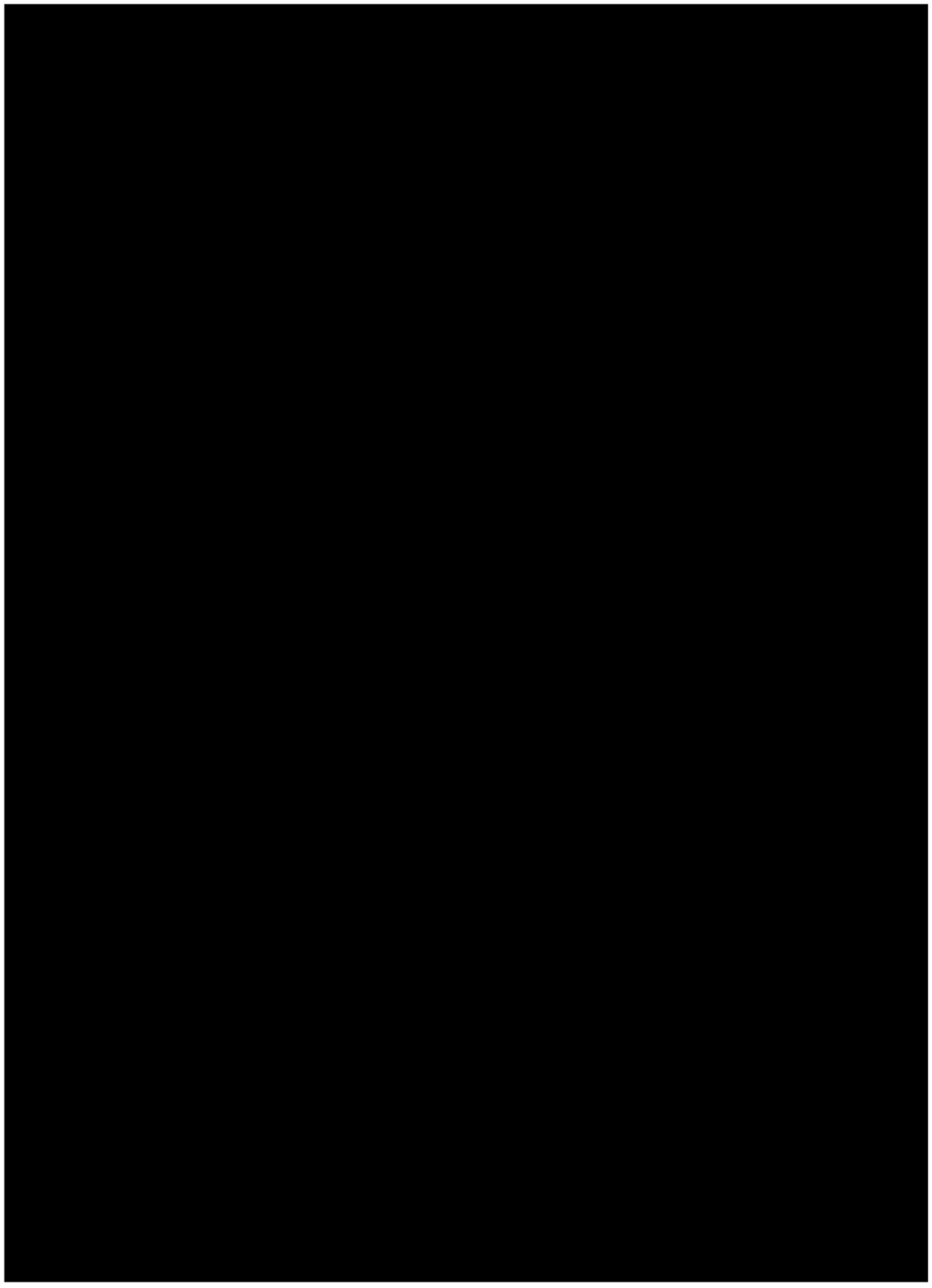
PRE-SHUTDOWN

If boiler chemistry is out of desire range, increase continuous blowdown by 10% & double the frequency of bottom blowdown.

[redacted]

SHUTDOWN

[redacted]



Depending on the duration of unit being down, refer to HRSG lay-up procedures.

Caution: If freezing condition exist, freeze protection must be applied to prevent damage to the HRSG.

CT SPIN COOL

PURPOSE
To assist in cooling of CT.

SPIN COOL

[redacted]

501F SPIN COOLING PROCEDURE

SPIN COOLING

This cool down spin procedure is proven to be effective and is allowed on W501F combustion turbines with hot restart capability.

The use of cool down spinning results in uniform cooling of the cylinder during the temperature transient after the unit shutdown. Uniform cooling of the cylinder maintains blade tip clearance

The cool down spin procedure is operator-initiated and controlled, and may be instituted as a unit operating procedure.

The procedure uses the starting motor for intermittent spinning cycles. The spinning must comply with the following recommendations to avoid detrimental effects to the gas turbine.

CAUTION

[redacted]

After completing the above procedure with the two spin cycles, the unit should then be returned to turning gear.

CAUTION

No continuous spin cooling is allowed.

For maintenance access purposes, the unit may be spin cooled for one hour at 620-670 rpm only if both of the following criteria are met:

- Unit must complete 12 hours of turning gear operation after second spin hold

And

[redacted]

The turbine will remain in the READY TOSTART state if needed for future service. Under normal conditions, 72 hours or disc cavity average temp, [redacted] is recommended before the turning gear is shut down.

Occasionally, it may be necessary to temporarily shut down the turning gear before the rotor has cooled sufficiently. In this case, note the position of the rotor and the time it is at standstill. The rotor should then be repositioned [redacted] degrees for the same period of time. In this way, whatever work is required with the shaft at rest, can be accomplished. The amount of time the shaft is not rolling is a function of temperature, but should not exceed 15 minutes before it is repositioned.

If the turbine has been out of service for an extended period and off turning gear, 12 hours of operation is recommended before starting.

* Note: These recommendations may change pending approval of the officially revised and released revision to the spin cooling procedure.

Reference:

1. Calpine Turbine Maintenance Group

WATER TREATMENT SHUTDOWN WITH CLARIFICATION IN RECIRCULATION MODE

PURPOSE

To remove the complete water system from service while maintaining the consistency of the in service clarifier beds.

PRE-SHUTDOWN

Verify that water tank sufficient water tank inventories exist for desired outage duration.

Verify condensate is out of service from Shell.

SHUTDOWN

Begin placing primary trains and multi-media filters in standby simultaneously one at a time to reduce the risk of overflowing the clear well.

Place one multi-media filter in re-circulation mode with a 725 gpm set point.

De-energize all out of service equipment motor breakers.

Isolate the CWA inlet manually at the clarifier common inlet.

Section 13

HURRICANE SUPPLIES

This list of items should be maintained in the warehouse on a pallet during Hurricane Season and may be inventoried each year on June 1.

6 - Heavy duty tarps 10' x 20'
1 - Roll of 1/2" rope
1 - Roll of 1/4" rope
6 - Rolls of duct tape
6 - Rolls of barricade tape
1 - Skewer of #9 wire
2 - Safety gas cans 5 gal.
2 - Safety diesel cans 5 gal.
1 - Portable electrical generator
2- Roll of plastic
5- Extension Cords
2- Port-a-cans

Section 14

HURRICANE AWARENESS INFORMATION

If you live or work in the Houston/Galveston area, you must be alert and prepared for the destructive force of a hurricane or tropical storm. The question in this area is not if a hurricane will hit; but, when will a hurricane hit?

The National Oceanic and Atmospheric Administration defines hurricane as a tropical cyclone, in which winds reach constant speeds of 74 miles per hour or more, and blow in a large spiral around a relatively calm center, or the eye of the hurricane. Simply stated hurricanes are giant whirlwinds in which air moves in a large tightening spiral around a center of extreme low pressure, reaching maximum velocity in a circular band extending outwards 20 to 30 miles out from the rim of the eye. This circulation is counterclockwise in the northern hemisphere and clockwise in the southern hemisphere. Near the center hurricane winds may gust to more than 200 miles per hour.

Because of the unpredictability and extreme danger of these storms, the Saffir/Simpson Hurricane scale (SSHS) was developed to give an estimate of the potential property damage and flooding that can be expected along the coast from a hurricane. This scale, ranging from one to five is based on the hurricane's present intensity.

SAFFIR/SIMPSON HURRICANE SCALE CLASS:

- Winds 74-95 mph or storm surge 4-5 feet above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal road flooding and minor pier damage.
- Winds 96-110 mph or storm surge 6-8 feet above normal. Some roofing material, door, and window damage to buildings. Considerable damage to vegetation, mobile homes, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of center. Small craft in unprotected anchorages break moorings.
- Winds 111-130 mph or storm surge 9-12 feet above normal. Some structural damage to small residences and utility buildings with a minor amount of curtain wall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain continuously lower than 5 feet may be flooded inland 8 miles or more.

HURRICANE AWARENESS INFORMATION (cont.)

- Winds 131-155 mph or storm surge 13-18 feet above normal. More extensive curtain wall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Major damage to lower floors of structures near the shore. Terrain continuously lower than 10 feet above sea level may be flooded inland as far as 6 miles.

- Winds 155 mph or storm surge greater than 18 feet above normal. Complete roof failure on many residences and industrial buildings. Some complete building failure with small utility buildings blown over or away. Major damage to lower floors of all structures located less than 15 feet above sea level and within 500 yards of the shoreline. Massive evacuation for residential areas on low ground within 5-10 miles of shoreline may be required.

HURRICANE TERMINOLOGY

TROPICAL DEPRESSION: An area of disturbed weather in the tropics that has the potential of storm development.

TROPICAL STORM: A closed low pressure circulation at the surface in the tropics with winds 39 to 73 MPH.

HURRICANE: A closed low pressure circulation in the tropics with winds in excess of 74 MPH.

SMALL CRAFT ADVISORY: When issued in conjunction with possible hurricane conditions for this area, advises small craft operators to take precautions and not to venture into the open Gulf.

GALE WARNINGS: When winds of 38-55 MPH are expected.

STORM WARNING: When winds of 55-74 MPH are expected. Normally, not used in the Gulf or this area; usually Hurricane warnings follow gale warnings.

HURRICANE WATCH: Hurricane may threaten this area within 24 to 36 hours.

HURRICANE WARNING: Hurricane force winds or high tides and seas are expected to strike this area within 24 hours.

TABLE OF CONTENTS

Page No.

1.0 PURPOSE

Due to Hidalgo Energy Center Station's close proximity to the Texas Gulf Coast and in as such that it is the this station's management intention to maintain the operations of this plant during hurricane season until such time that the safety of plant personnel and/or the safe operation of plant equipment is threatened or until the station is unable to export power it is necessary that Hidalgo Energy Center Station have a Hurricane Readiness Procedure in place to address hurricane issues.

2.0 SCOPE

This Procedure will delineate Hidalgo Energy Centers Station's contingency plan covering from the beginning of Hurricane Season (Condition II) until the end of Hurricane Season (Condition I). This procedure is being issued to address the following Hurricane/Tropical Storm issues:

- HEC's Hurricane /Flood Contingency Plan
- HEC's Hurricane Pay Policy
- HEC's Hurricane Crew
- HEC's Hurricane supplies and supply cabinet
- HEC's Emergency Contact Numbers
- General Hurricane Information (including Hurricane Tracking Map)

This procedure has been developed to assure that Hidalgo Energy Center is prepared in the event of a Hurricane/Tropical Storm threatens to make landfall on the South Texas Gulf Coast and will affect the plant.

3.0 ENFORCEMENT

All employees are expected to follow all guidelines outlined by this Procedure. Prior to the start of Hurricane Season, plant management shall meet to review and discuss the station's Hurricane /Flood Contingency Plan. Topics to be discussed shall include but not limited to the following:

a. Plant Readiness Status
b. Hurricane Supply Status
c. Changes in Company/Site Hurricane Procedure
d. Hurricane Crew Designations

During Hurricane Season, all Hidalgo Energy Center Employees will report to work as scheduled until such time the weather conditions make it impractical or management advises otherwise.

After a Hurricane condition that has caused employees to evacuate the area, employees should remain outside storm damage area until local authorities have given the all clear. It is the responsibility of all HEC employees that have evacuated the area to remain in contact with station management during hurricane conditions.

4.0 HEC'S HURRICANE/FLOOD CONTINGENCY PLAN

The Hidalgo Energy Center Hurricane/Flood Contingency Plan provides instructions to help prepare the station for a hurricane before, during and after a hurricane has passed the site. These instructions are intended to serve as a guideline and not a set of rigid rules.

The severity and speed in which a hurricane is forecast to make landfall will be used by plant Management to determine the time that these guidelines will go into effect. In some instances, depending on the speed of the Hurricane/Tropical Storm, some conditions may be skipped or omitted.

The Hidalgo Energy Center Hurricane /Flood Contingency Plan is comprised of eight different conditions. Recommendation as to when each condition should be set (become effective) is listed with the condition, however, the Plant Manager is the final deciding factor as to when the plant will elevate or downgrade from one condition to another.

Due to the unpredictability of a Hurricane/Tropical Storm, various plant personnel that are assigned duties/responsibilities within this plan may be on vacation. In the event that a specific person (i.e. Plant Manager, Operations Manager, Maintenance Manager etc.) is on vacation when a hurricane is forecast to make landfall in an area that would affect the plant, personnel designated to perform the normal duties of the person on vacation will also assume those duties /responsibilities assigned to that person within the HEC Hurricane /Flood Contingency Plan.

CONDITION II: (recommended to be set on June 1st at the beginning of Hurricane Season)

A. Plant Personnel will review the HEC Hurricane Procedure.

B. The Operations Manager will ensure that a formal review of the HEC Hurricane Procedure is covered in the June Safety Meeting each year.

C. Plant Personnel should begin to monitor local weather forecasts and national weather broadcasts for early signs of Hurricane/tropical storm warnings.

D. The Plant Manager will call a management meeting to discuss the plant weather emergency readiness. (a special meeting does not need to be called as the normal Monday Morning briefing will suffice).

E. All personnel will begin early preparations, which include plant wide housekeeping, proper stowage, and inventory.

F. The Business Manager will ensure that Calpine Corporation home office is contacted and plans made for the transfer of files should this become necessary.

G. The Maintenance and the Operations Manager shall ensure that the plant is surveyed for equipment and/or items not deemed necessary and will make arrangements to have this equipment removed from site.

H. Control Room Operators will confirm the telephone and emergency telephone numbers of employees and vendors located on the Emergency Contact List.

I. The volunteer list for the hurricane emergency crew will be posted and should be completed by no later than the end of the 2nd week of June.

CONDITION III:(recommended to be set when a hurricane/tropical storm has formed in or entered the Gulf of Mexico, and there is no immediate threat to the Site)

A. All employees and contract employees should start making family plans and preparations at home.
B. Move mobile equipment to safe area to be tied down as necessary or remove equipment from the site.
C. Remove all loose items that are not necessary to conduct normal plant operations, throughout the plant and store, i.e. air hoses, ladders, trash receptacles, prepare sand bags for low lying areas and etc.
D. Verify tie-downs on all portable buildings.
E. Remove all unnecessary contracted equipment from plant.
F. Order acid, caustic, and any other chemicals as needed to fill tanks respectively.
G. Remove any empty or extra gas bottles from the site.
H. The control room operator will keep good communications with AEP and Calpine Marketing Group to keep them posted from this point on of any change in plant operations as it becomes necessary.

CONDITION IV:(recommended to be set when a hurricane/tropical storm is in the Gulf and a potential landfall for the South Texas Coast has been forecasted)

A. Plant Management will discuss storm location, direction, and areas of responsibilities, plant readiness.
B. The Operations Manager will verify that provisions for the sites Hurricane Supply Cabinet are stocked for Hurricane Crew. (See Hurricane Supply List) and make any last minute arrangements as necessary.
C. The Hurricane Crew will be put on 24-hour alert status.
D. The control room operator will continue to monitor the progression of the storm.
E. The Operations Manger will closely monitor the emergency radio broadcast frequency and advise the Plant Manager of any bulletins by local authorities that are broadcasted.

CONDITION V:(recommended to be set when a hurricane/tropical storm is forecast to make landfall in the immediate area within 24 hours)

A. Management will meet and discuss the Hurricane/Tropical Storm, the plans of a possible plant shutdown and evacuation and the setting of the Hurricane crew.
B. The Operations Manager will notify the Hurricane Crew to make final preparations at home and for their families, and to report back to work no later than 12 hours from the time they were put on notice.
C. The Business Manger will ensure the start of the transfer of predetermined files.
D. The Maintenance Manager will ensure the computer and server files are backed up.

E. The Maintenance Manger will ensure that all company vehicles are filled with fuel.
F. Plant Management will make a final walk through the plant and list any discrepancies (ensure doorways in low lying areas have been properly sand bagged).
G. The Operations Manager will ensure all vendors whose services may be needed after the hurricane has passed have been contacted and inform of the need of their services within 24 hours of the hurricane's passing.

CONDITION VI:(recommended to be set when a hurricane/tropical storm is forecast to make landfall in the immediate area **within 12 hours**)

NOTE:

IF HURRICANE FORCE WINDS IN EXCESS OF 100-MILES PER HOUR ARE EXPECTED TO REACH THE PLANT, PLANT MANAGEMENT WILL DISCUSS THE POSSIBILITY OF A CONTROL PLANT SHUTDOWN PRIOR TO THE HURRICANE WINDS REACHING THE SITE. PLANT SHUTDOWN SHOULD START 8 HOURS BEFORE BUT NO LATER THAN 6 BEFORE THE STORMS PREVAILING WINDS ARE PREDICTED TO REACH THE SITE.

A. The Hurricane Crew upon arriving on site, will report to the control room and log in and will assume the watch station responsibilities of the plant.
B. Plant Personnel not designated as part of the Hurricane Crew and are still on site will be allowed to leave the site to complete their personal hurricane preparation plans for their home.
C. The Hurricane Crew will make a walk through of the plant to insure its readiness for storm conditions and correct any last minute discrepancies.
D. The Operations Manager will develop a final list of all plant personnel left on site and forward the list to the Local Authorities.
E. Hurricane pay in effect
F. Plant Management will meet with the Hurricane Crew and discuss strength of the storm, possible plant shutdown and evacuation.
G. If Plant Management determines that the plant needs to be shutdown due to hurricane force winds in excess of 100 miles are expected to reach the plant, then, the Hurricane Crew will shutdown the plant as follows:
    a. If the plant is in a 2x1 status, then, one of the CTs will be shutdown no less than 6 hours prior to the excessive hurricane winds are forecast to reach the plant.
    b. If the plant is already in a 1x1 status, then, the plant will remain so until 4 hours before the excessive hurricane winds are forecasted to reach the plant at which time hurricane crew will shutdown the remaining CT and the Steam Turbine.
H. A cell phone and a spare battery should be made available for the control room if possible.

CONDITION VII:(recommended to be set when a hurricane/tropical storm is forecast to make landfall in the immediate area **within 8 hours**)

A. In the event winds in excess of **120 mph** are forecast to reach the site, then the Hurricane Crew will commence a normal Plant Shutdown and upon a safe shutdown of the plant, the on watch Control Room Operator will implement plans for the safe evacuation of the Hurricane Crew.

B. No one **SHALL** venture out into the plant alone, and only teams of two may go out in an emergency with the following equipment: hard hats with chin straps, rubber boots, gloves, safety glasses, and foul weather gear.

C. If evacuation becomes necessary, the Control Room Operator will notify Local Authorities of the Hurricane Crews plans for evacuation.

CONDITION VIII:(recommended to be set after a hurricane/tropical storm has passed and the Plant/General Manager has issued an ALL CLEAR)

A. Following the passing of the hurricane and the subsiding of any floodwaters, the Hurricane Crew if still on site, will tour the plant to assess the damage that was sustained by the plant. Pictures should be taken of damage if possible.
B. In the event that the Hurricane Crew was required to evacuate the site, then, when it is safe to return, the hurricane crew will assess the plant damage and make preparations for restarting the plant.
C. As soon as practical, all employees who were released from work should contact the plant and give a contact number to the Control Room Operator and their availability to report to work.
D. All individuals that are on the job site or entering the job site must take extreme caution.
E. Due to the possibility of water action and undermining, care must be taken when driving or walking in the plant.
F. There could be a possibility of electrical shock due to flooding of cable pits, motor starters and switches. Extreme care must be taken when working near this equipment.
G. Pollution of drinking water due to high tides could be possible. Until the city has given the all clear to the potable water system, bottled water only should be consumed.
H. There may be items of debris blown partially free or hanging precariously. Broken glass will pose a problem on the ground. Special care must be taken when walking under equipment.
I. Due to flooding waters, animals and or insects may have been displaced. Extreme caution must be taken when touring the site or when opening any outside cabinets.

CONDITION I:(recommended to be set on Nov 30th at the end of Hurricane Season)

A. Normal Plant Operations

Commence evaluation of the Plant for Cold Weather Season.

6.0 HURRICANE CREW

Hidalgo Energy Center will attempt to staff the Hurricane Crew with volunteers, however in as such that there are not enough volunteers, Plant Management shall designate operations personnel to man the station until such time that site conditions have returned to normal or if an evacuation of the plant becomes necessary.

At the beginning of each Hurricane Season, a list of personnel volunteering for the Station's Hurricane Crew will be generated by the Operations Manager. A copy of this list will be maintained in the control room's contact book or posted in a general area accessible by all HEC employees.

Volunteers for the Station's Hurricane Crew will be allowed to leave the plant 36-24 hours prior to o hurricane making landfall to ensure all of their personal and family interests are safely secured.

HEC Hurricane Crew

EFFECTIVE DATE: From June/1/ To Nov/30/		
	Name	Phone
A Operators/Techs:	1.	
	2.	
B Operators/Techs:	1.	
	2.	
C Operators/Techs:	1.	
	2.	
I&C:	1.	
	2.	
Mechanical:	1.	
ALTERNATES:		
Operations:	1.	
	2.	
Maintenance:	1.	
	2.	

8.0 HEC HURRICANE SUPPLIES AND SUPPLY CABINET CHECKLIST

Essentials:

- ❑ Battery-operated radio
- ❑ Flashlight
- ❑ Extra batteries

Do not include candles, which cause more fires after a disaster than anything else

Water:

- ❑ 3 gallons/person, minimum, in a food-grade, plastic container
- ❑ Additional water for sanitation

Food:

Minimum 3-day supply of non-perishable food that requires no refrigeration or preparation and little or no water.

- ❑ Dry cereal
- ❑ Peanut butter
- ❑ Canned fruits
- ❑ Canned vegetables
- ❑ Canned juice
- ❑ Ready-to-eat canned meats
- ❑ Ready-to-eat soups (not concentrated)
- ❑ Quick energy snacks, graham crackers

First Aid Kit:

- ❑ Scissors
- ❑ Sunscreen
- ❑ Tweezers
- ❑ Cleansing agent/soap
- ❑ Latex gloves (2 pairs)
- ❑ Tongue blades (2)
- ❑ Moistened towelettes
- ❑ Assorted sizes of safety pins
- ❑ 2" sterile gauze pads (4-6)
- ❑ 4" sterile gauze pads (4-6)
- ❑ 2" sterile roller bandages (3 rolls)
- ❑ 3" sterile roller bandages (3 rolls)
- ❑ Triangular bandages (3)
- ❑ Sterile adhesive bandages in assorted sizes
- ❑ Aspirin or non-aspirin pain reliever
- ❑ Antacid (for stomach upset)

Tools and Supplies:

- ❑ Screwdriver set
- ❑ Instant Liters
- ❑ Razors
- ❑ Ziploc storage bags
- ❑ Toothpaste
- ❑ Caution Tape
- ❑ Matches in a waterproof container
- ❑ Tarps
- ❑ Hand Wipes□
- ❑ Plastic storage containers
- ❑ Heavy cotton or hemp rope
- ❑ Utility Knife
- ❑ Non-electric can opener,
- ❑ Mess kits, or paper cups, plates and plastic utensils
- ❑ Tape, duct and plumber's tape or strap iron
- ❑ Patch kit and can of seal-in-air for tires
- ❑ Tie Wraps

Sanitation:

- ❑ Disinfectant
- ❑ Household chlorine bleach
- ❑ Soap, liquid detergent
- ❑ Personal hygiene items
- ❑ Toilet paper, towelettes, paper towels
- ❑ Plastic garbage bags, ties (for personal sanitation uses)

Clothing and Bedding:

- ❑ Rain gear
- ❑ Hat and gloves
- ❑ Blankets or sleeping bags
- ❑ One complete change of clothing and footwear per person

Important Documents:

- ❑ Important telephone number Calpine Directory/Employee Emergency contact list.

Entertainment:

- ❑ Games and Books
- ❑ Playing Cards

9.0 EMERGENCY CONTACT PHONE NUMBERS

Central Region Office (CRO):

Corporate	[redacted]
Northbrook	
CRO	
CRO/CNG I.S. (late night on-call)	
CRO Dispatch	
Calpine Gas Pipeline	

Calpine HEC:

Robert Latham	Plant Manager	[redacted]
Joe Moreno	Operations Manager	
Dale Dunn	Maintenance Manager	
Charles Randall	Site Health and Safety	
Greg Garza	Materials Specialist	

Misc.:

Fire or Medical Emergency		911
Calpine Medical Director	Dr. Jay Jarris	[redacted]
Safety /Health Manager	Maciel Lopez	
GE Representative		
Environmental Manager	Jan Stavinoha	
HCID Water Dist	Richard Garza	
AEP North Edinburg Substation	Paul	
Edinburg Water Treatment Plant		
Kinder Morgan (Tetco Gas Line)	Rudy Garza	

10.0 GENERAL HURRICANE INFORMATION

The National Oceanic and Atmospheric Administration defines hurricane as a tropical cyclone, in which winds reach constant speeds of 74 miles per hour or more, and blows in a large spiral around a relatively calm center, or the eye of the hurricane. Simply stated, hurricanes are giant whirlwinds in which air moves in a large tightening spiral around a center of extreme low pressure, reaching maximum velocity in a circular band extending outwards 20 to 30 miles out from the rim of the eye. This circulation is counterclockwise in the Northern Hemisphere. Near the center, hurricane winds may gust to more than 200 miles per hour.

To better categorize hurricane and the damage caused by them, the Saffir/Simpson Hurricane scale (SSHS) was developed to give an estimate of the potential property damage and flooding that can be expected from a hurricane. This scale, ranging from one to five is based on the hurricane's intensity.

1. **Category 1 Hurricane** - winds are expected to be between 74-95 mph and a storm surge between 4-5 feet above normal. Damage primarily to shrubbery, trees, foliage, and unanchored homes. No real damage to other structures. Some damage to poorly constructed signs. Low-lying coastal roads inundated, minor pier damage, some small craft in exposed anchorage torn from moorings.

   Category 2 Hurricane - winds is expected to reach between 96-110 mph and a storm surge between 6-8 feet above normal. Considerable damage to shrubbery and tree foliage; some trees blown down. Major damage to exposed mobile homes. Extensive damage to poorly constructed signs. Some damage to roofing materials of buildings; some window and door damage. No major damage to buildings. Coast roads and low-lying escape routes inland cut by rising water 2 to 4 hours before arrival of hurricane center. Considerable damage to piers. Marinas flooded. Small craft in unprotected anchorages torn from moorings. Evacuation of some shoreline residences and low-lying areas required.

   Category 3 Hurricane - winds are expected to reach between 111-130 mph and a storm surge between 9-12 feet above normal. Foliage torn from trees; large trees blown down. Practically all poorly constructed signs blown down. Some damage to roofing materials of buildings; some wind and door damage. Some structural damage to small buildings. Mobile homes destroyed. Serious flooding at coast and many smaller structures near coast destroyed; larger structures near coast damaged by battering waves and floating debris. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives. Flat terrain 5 feet of less above sea level flooded inland 8 miles or more. Evacuation of low- lying residences within several blocks of shoreline possibly required.

2. **Category 4 Hurricane** - winds are expected to reach between 131-155 mph and a storm surge between 13-18 feet above normal is also expected. Shrubs and trees blown down; all signs down. Extensive damage to roofing materials, windows and doors. Complete failures of roofs on many small residences. Complete destruction of mobile homes. Flat terrain 10 feet of less above sea level flooded inland as far as 6 miles. Major damage to lower floors of structures near shore due to flooding and battering by waves and floating debris. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives. Major erosion of beaches. Massive evacuation of all residences within 500 yards of shore possibly required, and of single- story residences within 2 miles of shore.

3. **Category 5 Hurricane** - winds are expected to be equal to or greater than 156-mph and a storm surge equal to or greater than 19 feet above normal. Shrubs and trees blown down; considerable damage to roofs of buildings; all signs down. Very severe and extensive damage to windows and doors. Complete failure of roofs on many residences and industrial buildings. Extensive shattering of glass in windows and doors. Some complete building failures. Small buildings overturned or blown away. Complete destruction of mobile homes. Major damage to lower floors of all structures less than 15 feet above sea level within 500 yards of shore. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives. Massive evacuation of residential areas on low ground within 5 to 10 miles of shore possibly required.

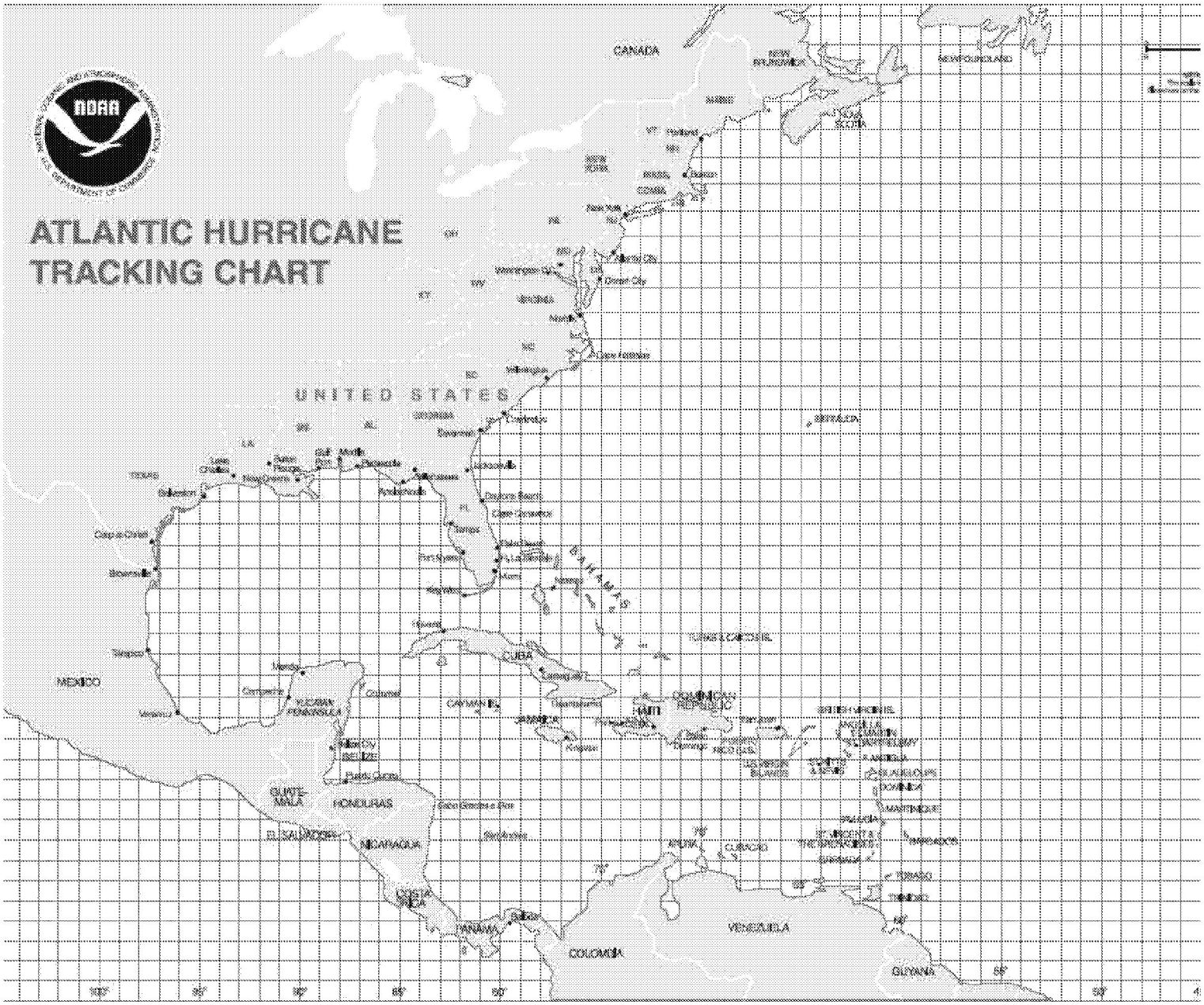
4. **Tropical Depression –** a tropical cyclone with maximum sustained surface winds of less than 39 mph.

5. **Tropical Storm** - tropical cyclone whose maximum sustained surface winds reach at least 39 mph typically called a "tropical storm" and assigned a name

   HURRICANE WARNING: issued for that part of the coast to indicate that sustained winds of at least 74 mph are expected within 24 hours or less.

6. **HURRICANE WATCH:** issued for that part of the coast to indicate the possibility that you could experience hurricane conditions within 36 hours.

MAXIMUM SUSTAINED SURFACE WINDS: According to the National Hurricane Center (NHC) and the Joint Typhoon Warning Center (JTWC) of the USA, a 1 min averaging period of wind speed is used to record the maximum sustained winds.



2022 Jack A. Fusco Hurricane Procedure

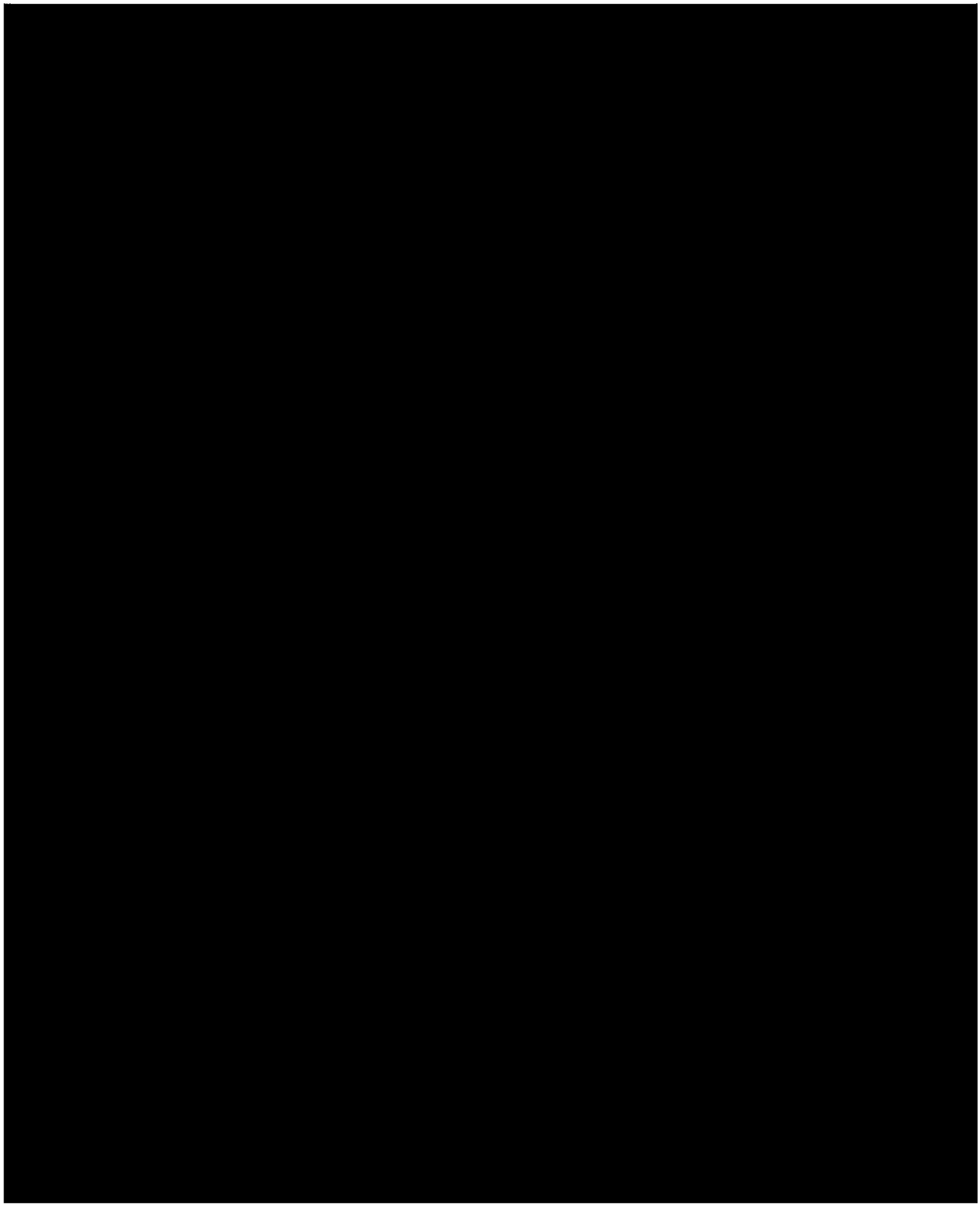
TABLE OF CONTENTS

2. HURRICANE POLICY:

(a) It is the intention of management to maintain the operations of the plant until such time that the safety of plant personnel and/or equipment is threatened or until the plant is unable to export power due to transmission line problems.

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

(c) The Plant Manager or his designee will make final decisions as to what steps will be taken and when they occur.



4. PURPOSE:

(a) This Hurricane Procedure has been developed to assure that Jack A. Fusco and its employees are prepared in the event a tropical storm or hurricane weather condition should threaten to strike the upper Texas coast.

(b) This procedure provides information and outlines steps to protect personnel and equipment against the possible destruction of 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. Jack A. Fusco relies on the National Weather Service broadcasts for the latest changing weather conditions and the probability values for possible landfall of a tropical storm or hurricane.

(c) For better preparedness and smooth transitions in case of the threat of a tropical storm or hurricane, this procedure has been divided into six phases of readiness. Six phases have been developed and their definitions are listed below.

1. **PHASE I:** the beginning of hurricane season. (JUNE 1st)

2. **PHASE II: STORM/HURRICANE ALERT** A tropical storm/hurricane has formed and is threatening to enter or has entered the Gulf of Mexico but is not an immediate threat.

3. **PHASE III: STORM/HURRICANE WATCH** A tropical storm/hurricane has entered the Gulf of Mexico and has become a potential threat to the immediate area within the next 36 hours.

4. **PHASE IV: STORM/HURRICANE WARNING** A tropical storm/hurricane is predicted to make landfall in the immediate area within a 24-hour period. Put the HURRICANE CREW on 16-hour notice.

5. **PHASE V: HURRICANE DUTY** A tropical storm/hurricane will make landfall within the next 12 hours. Set the HURRICANE CREW watch. Begin plans for plant evacuation.

6. **PHASE VI: POST HURRICANE** The time following the hurricane until the Plant Manager or his designee sounds the all clear.

5. PHASE 1:

JUNE 1st, the beginning of hurricane season.

(a) All personnel begin closely monitoring local weather forecasts and national weather broadcasts for early signs of Tropical Storm warnings.

(b) All personnel will review the Hurricane Procedure.

(c) The Plant Manager will call a management meeting to discuss the plant and personnel weather emergency readiness.

(d) All personnel will begin early preparations, which include, plant wide housekeeping, proper stowage, and inventory. This also includes readiness at home as well.

(e) The Operations Manager will contact the Calpine Corporation home office. Plans should be made for the transfer of files should this become necessary.

(f) The Operations Manager and the Maintenance Manager will survey the plant for equipment and/or items not deemed necessary, and should make arrangements to have this equipment removed from site.

(g) All OP Tech III's will confirm the telephone and emergency telephone numbers of employees and vendors which will be included in this manual.

(h) The warehouse will maintain during hurricane season a stock of the necessary emergency supplies.

(i) The volunteer list for the hurricane emergency crew will be posted and should be completed by no later than the end of May.

6. PHASE II: TROPICAL STORM/HURRICANE ALERT:

A tropical storm/hurricane has formed and is threatening or has entered the Gulf of Mexico, but is not an immediate threat to our area.

Management will meet and discuss the following:

(a) Storm location and direction of travel.

(b) Areas of responsibility.

(c) Plant readiness and implementation of Phase II action.

(d) Formally implement Phase II.

Once Phase II is formally implemented take the following steps:

(a) The control room operator will announce all weather bulletins.

(b) All employees and contract employees should start making family plans and preparations at home: at least 36 hours before storm makes landfall.

(c) The following in-plant preparations should be implemented:

1. Move mobile equipment to safe area to be tied down as necessary.
2. Remove all loose items throughout the plant and store, i.e. air hoses, fire extinguishers, ladders.
3. All breaker enclosure doors and electrical panels located outside will be wired shut.
4. Verify tie-downs on all portable buildings.
5. Remove all unnecessary contracted equipment from plant.
6. Order acid, caustic, and any other chemicals as needed to fill tanks respectively.
7. Ensure adequate CO2 is on-site in the event generators must be purged of Hydrogen.

8. Remove any empty or extra gas bottles from the site.

9. Any change in operation status must be communicated through our control room operator and the Operations Manager.

10. The CRO will contact all vendors whose services may be needed after the storm has passed and inform them we may be in need of their services within 24 hours of a storms passing.

7. PHASE III: TROPICAL STORM/HURRICANE WATCH:

A tropical storm/hurricane is in the Gulf of Mexico and a potential threat.

Management will meet and discuss the following:

(a) Storm location and predictions.

(b) Estimated Time of Arrival of storm should it be determined if headed in our direction.

(c) Estimated time that a plant evacuation should be ordered.

(d) Areas of responsibility.

(e) Plant readiness and the formal implementation of Phase III action.

Once Phase III is formally implemented take the following steps:

(a) The Operations Manager will have supplies stocked for Hurricane Duty personnel.

(b) The CRO on duty will contact all off duty personnel to advising them of the status of the plant and to request information concerning their availability should they be needed.

(c) The CRO on duty will contact gas suppliers to determine the status of gas availability.

(d) The Hurricane Duty Crew will be put on 24-hour alert status.

(e) The CRO will continue to monitor the progression of the storm and continually update the Plant Management.

(f) The CRO will update the Plant Management of any changes in status of gas suppliers and Calpine Energy Services.

(g) The CRO will closely monitor the emergency radio broadcast frequency and advise the Plant Management of any bulletins by local authorities that are broadcast.

(h) The CRO will keep a thorough log of all broadcasts and happenings as they occur for study at a later date.

8. PHASE IV: TROPICAL STORM/HURRICANE WARNING:

A tropical storm/hurricane is predicted to make landfall in the immediate area within a 24-hour period. Hurricane force winds are imminent.

Management will meet and discuss the following:

(a) Storm location, size, category, predictions and possible storm surge.

(b) Estimated Time of Arrival of storm.

(c) Employee family readiness.

(d) Gas suppliers and Calpine Energy Services communications, evacuation times, implementation of the hurricane crew, local authority's emergency information, and possibility of plant shutdown.

(e) Formal implementation of PHASE IV.

Once PHASE IV is formally implemented take the following steps:

(a) The Operations Manager and/or Maintenance Manager will notify the Hurricane Duty crew to make final preparations at home and for their families, and to report back to work not later than 8 hours from the time they were put on notice.

(b) The Plant Administrator will begin the transfer of predetermined files.

(c) The Operations Manager will make computer back-up discs.

(d) Cover computers and DPU's with plastic to protect against water damage.

(e) The CRO on duty will contact Richmond Fire Department and provide them a list of the employees left on site.

(f) The Operations Manager discuss power demands, and availability of water.

(g) The Operations Manager will contact the plant gas suppliers and inform them of operations plans and gas needs. Emergency numbers will be exchanged.

(h) The Warehouse Clerk will verify and/or fill all company vehicles with fuel.

(i) The Operations Manager and/or Maintenance Manager will develop a final list of all plant personnel and emergency telephone numbers where they may be reached for distribution.

(j) The CRO will check the status of radios and batteries.

(k) The Hurricane Crew upon returning to the plant site will do the following:
1. Report to the control room and log in.
2. Make a plant walk through.
3. Meet with the plant management and be briefed on plans, strength of the storm, possible plant shutdown and evacuation.
4. Relieve the operations and maintenance duty personnel.
5. Continue to monitor weather updates throughout the storm.

9. PHASE V: HURRICANE DUTY:

A tropical storm/hurricane is predicted to make landfall in the immediate area within a 12 hour period.

NOTE: IF HURRICANE FORCE WINDS ARE EXPECTED IN EXCESS OF 100 MILES PER HOUR, IT IS THE POLICY OF JACK FUSCO TO BEGIN A CONTROLLED PLANT SHUTDOWN STARTING WITHIN 10 HOURS OF THE STORM'S PREVAILING WINDS REACHING OUR AREA. REFER TO THE EMERGENCY PLANT SHUTDOWN PROCEDURE FOR PROPER PLANT SHUTDOWN SEQUENCE.

(a) At 12 hours from landfall, the (Hurricane Duty Crew) CRO will assume the responsibilities of the plant.

(b) The CRO will make a walk-through of the plant to ensure its readiness for storm conditions.

(c) The CRO will inventory the supplies to insure an ample supply of food, water, and other necessities he feels are necessary for his crew and makes any necessary adjustments.

(d) The CRO will do everything within his power to ensure the safety of his crew.

(e) In the event winds in excess of 100 mph are expected, the CRO will follow the shutdown procedure written in this procedure.

(f) The CRO will maintain his crew inside the control building and not allow any venturing outside during the high winds.

(g) No ***one*** person shall venture out into the plant alone; tag teams of two may go out in an emergency with the following equipment: hard hats with chin straps, safety harness with bung cords of no more than 10 feet in length, rubber boots and gloves, safety glasses with side shields, foul weather gear.

(h) If evacuation becomes necessary, the CRO will notify Richmond Fire Department of his plans for evacuation.

NOTE: IT IS IMPORTANT TO REMEMBER THAT THE EYE OF A HURRICANE THOUGH CALM CAN BE DECEIVING. DO NOT TRUST THIS CALM WITH YOUR LIFE OR YOU MAY FIND YOURSELF TRAPPED IN THE MIDDLE OF A HURRICANE.

10. PHASE VI: POST HURRICANE:

The time following the passage of a hurricane until the Plant Manager or his designee issues the all clear.

Following the passage of the hurricane and the subsidence of possible floodwaters, the following should be done:

(a) As the storm passage allows, the Hurricane Duty crewmembers will tour the plant to assess the damage incurred. Pictures should be taken of damage.

(b) As soon as possible, each employee should contact the plant. A contact number should be given to the CRO .Each employee should inform the CRO as to his or her availability to report to work.

(c) All individuals that are on the job site or entering the job site must take extreme caution. Some of these cautions are as follows:

1. Due to the possibility of water action and undermining, care must be taken when driving or walking in the plant.

2. There could be a possibility of electrical shock due to flooding of cable pits, motor starters and switches. Extreme care must be taken when working near this equipment.

3. Pollution of drinking water due to high tides could be possible. Until the city has given the all clear to the potable water system, bottled water only should be consumed.

4. There may be items of debris blown partially free or hanging precariously. Broken glass will pose a problem on the ground. Special care must be taken when walking under equipment.

11. DUTIES AND RESPONSIBILITIES:

Responsibilities during a hurricane emergency will follow normal operating routine. Special responsibilities are listed below.

Employees:

(a) Report to work as scheduled until such a time that weather conditions make it impractical or management or local law enforcement otherwise advises you.

(b) After a storm: All employees who have evacuated the area should remain outside of storm damaged area until the all clear is given by the local law enforcement agencies. In some cases it may be necessary to show proof that you live or work in the area to get past roadblocks that may be set up.

(c) Volunteers for the Hurricane Duty Crew should have all of their personal and family interests safely secured within 24 hours of a storms threatening landfall.

(d) Stay in touch with management for scheduling changes.

Plant Management:

(a) Meet and discuss objectives/options.

(b) Direct all plant activities.

(c) Initiate all phases of hurricane plan as necessary.

(d) Release all non-essential personnel when/if appropriate.

12. 2021 HURRICANE DUTY VOLUNTEER LIST

During a hurricane, a crew of at least 7 members will be designated from personnel on site and or the volunteer list. The volunteers are as follows:

Operations (4)	**Alternates**
_____	_____
_____	_____
_____	_____
_____	_____
I&E (1)	
_____	_____
Mechanical (1)	
_____	_____
Managers (1-2)	
_____	_____
_____	_____

13. EMERGENCY SHUTDOWN PROCEDURE:

This shutdown procedure is designed to give the plant maximum time allowable for safe shutdown and evacuation if necessary and still give enough flexibility in our plan to stay on line in case of change of direction or force of the incoming hurricane. In the event the maximum sustained winds are predicted to be greater than 100 miles per hour, and the hurricane's course is predicted within a 50-mile radius of Richmond the following steps will be taken with management approval. It is important to monitor the National Oceanic & Atmospheric Administration (www.noaa.gov) weather radio broadcasts for updates during and after each step is taken in case of change.

(a) Shut down CT-1 6 hours before greater than 100 mph winds are expected to hit Richmond.

(b) Shut down CT-2 and ST-3 3 hours before greater than 100 mph winds are expected to hit Richmond.

Notify Plant Manager, Ops. Manager and Maint. Manager prior to beginning shutdown procedures.

14. HURRICANE SUPPLIES

This list of items should be maintained in the warehouse during Hurricane Season and may be re-inventoried each year on June 1st.

1 - Roll of 1/2" rope

1 - Roll of 1/4" rope

6 - Rolls of duct tape

6 - Rolls of barricade tape

1 - Scare of #9 wire

1 - Roll of plastic

Burner propane stove

Air mattresses

2022 Hurricane Food Locker Combinations

Dry food goods and sleeping bags are in the ladies bathroom locker numbers #4, #6 & #8

These combinations are correct and do work; the locks are a little sticky.

#4	1-19-29
#6	33-21-9
#8	28-12-38

2022 Hurricane Supply Locker Inventory

Amount		Item
3	boxes	Pasta
3	jars	Spaghetti sauce
3	boxes	Mac & Cheese
1	jar	Apple Sauce
2	bags	pinto beans
1	bag	rice
12	cans	chicken noodle soup
2	cans	Bush baked beans
2	12 pkg	canned tuna
6	cans	chili
4	cans	red beans
3	boxes	cookies
2	boxes	crackers
1	12-pkg	Lemon water
1	12-pkg	Grapefruit water
1	Jar	syrup
1	Bottle	olive oil
2	Bags	pinto bean seasoning
6	Boxes	breakfast bars
1	Bag	pancake mix

15. HURRICANE AWARENESS INFORMATION:

(a) If you live or work in the Houston/Galveston area, you must be alert and prepared for the destructive force of a hurricane or tropical storm. The question in this area is not if a hurricane will hit; but, when will a hurricane hit?

(b) The National Oceanic and Atmospheric Administration defines hurricane as a tropical cyclone, in which winds reach constant speeds of 74 miles per hour or more, and blow in a large spiral around a relatively calm center, or the eye of the hurricane. Simply stated hurricanes are giant whirlwinds in which air moves in a large tightening spiral around a center of extreme low pressure, reaching maximum velocity in a circular band extending outwards 20 to 30 miles out from the rim of the eye. This circulation is counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere. Near the center hurricane winds may gust to more than 200 miles per hour.

(c) Because of the unpredictability and extreme danger of these storms, the Saffir/Simpson Hurricane Scale (SSHS) was developed to give an estimate of the potential property damage and flooding that can be expected along the coast from a hurricane. This scale, ranging from one to five is based on the hurricane's present intensity.

1. **Class One.** Winds 74-95 mph or storm surge 4-5 feet above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal road flooding and minor pier damage.

2. **Class Two.** Winds 96-110 mph or storm surge 6-8 feet above normal. Some roofing material, door, and window damage to buildings. Considerable damage to vegetation, mobile homes, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of center. Small craft in unprotected anchorages break moorings.

3. **Class Three.** Winds 111-130 mph or storm surge 9-12 feet above normal. Some structural damage to small residences and utility buildings with a minor amount of curtain wall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain continuously lower than 5 feet may be flooded inland 8 miles or more.

4. **Class Four.** Winds 131-155 mph or storm surge 13-18 feet above normal. More extensive curtain wall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Major damage to lower floors of structures near the shore. Terrain continuously lower than 10 feet above sea level may be flooded inland as far as 6 miles.

5. **Class Five.** Winds 155 mph or storm surge greater than 18 feet above normal. Complete roof failure on many residences and industrial buildings. Some complete building failure with small utility buildings blown over or away. Major damage to lower floors of all structures located less than 15 feet above sea level and within 500 yards of the shoreline. Massive evacuation for residential areas on low ground within 5-10 miles of shoreline may be required.

16. HURRICANE TERMINOLOGY:

- **GALE WARNINGS:** When winds of 38-55 MPH are expected.
- **HURRICANE:** A closed low-pressure circulation in the tropics with winds in excess of 74 MPH.
- **HURRICANE WARNING:** Hurricane force winds or high tides and seas are expected to strike this area within 24 hours.
- **HURRICANE WATCH:** Hurricane may threaten this area within 24 to 36 hours.
- **SMALL CRAFT ADVISORY:** When issued in conjunction with possible hurricane conditions for this area, advises a small craft operator to take precautions and not to venture into the open Gulf.
- **TROPICAL DEPRESSION:** An area of disturbed weather in the tropics that has the potential of storm development.
- **TROPICAL STORM:** A closed low-pressure circulation at the surface in the tropics with winds 39 to 73 MPH.

Policy: MVG Hurricane Readiness Plan PLANT CONTINGENCY PLAN	**Effective Date: 6/15/05**
Approved Date: 6/15/05	**Revision Date: 11/29/16**
Approval Signature: Robert Latham	**Revision No. 2**

Due to Magic Valley Generation Station's close proximity to the Texas Gulf Coast and in as such that it is the this station's management intention to maintain the operations of this plant during hurricane season until such time that the safety of plant personnel and/or the safe operation of plant equipment is threatened or until the station is unable to export power it is necessary that Magic Valley Generation Station have a Hurricane Readiness Plan in place to address hurricane issues.

This policy will delineate Magic Valley Generations Station's contingency plan covering from the beginning of Hurricane Season (Condition II) until the end of Hurricane Season (Condition I). This policy is being issued to address the following Hurricane/Tropical Storm issues:

1. MVG's Hurricane Contingency Plan
2. MVG's Hurricane Pay Policy
3. MVG's Hurricane Crew
4. MVG's Hurricane supplies and supply cabinet
5. Emergency Contact Numbers
6. General Hurricane Information (including Hurricane Tracking Map)

This policy has been developed to assure that Magic Valley Generating Station is prepared in the event of a Hurricane/Tropical Storm threatens to make landfall on the South Texas Gulf Coast and will affect the plant.

All employees are expected to follow all guidelines outlined by this Policy.

Prior to the start of Hurricane Season, plant management shall meet to review and discuss the station's Hurricane Contingency Plan. Topics to be discussed shall include but not limited to the following:

a. Plant Readiness Status
b. Hurricane Supply Status
c. Changes in Company/Site Hurricane Policy
d. Hurricane Crew Designations

During Hurricane Season, all Magic Valley Generating Station Employees will report to work as scheduled until such time the weather conditions make it impractical or management advises otherwise.

After a Hurricane condition that has caused employees to evacuate the area, employees should remain outside storm damage area until local authorities have given the all clear. It is the responsibility of all MVG employees that have evacuated the area to remain in contact with station management during hurricane conditions.

1. **MVG's Hurricane Contingency Plan:**
   The Magic Valley Generating Station Hurricane Contingency Plan provides instructions to help prepare the station for a hurricane before, during and after a hurricane has passed the site. These instructions are intended to serve as a guideline and not a set of rigid rules.

   The severity and speed in which a hurricane is forecast to make landfall will be used by plant Management to determine the time that these guidelines will go into effect. In some instances, depending on the speed of the Hurricane/Tropical Storm, some conditions may be skipped or omitted.

   The Magic Valley Hurricane Contingency Plan is comprised of eight different conditions. Recommendation as to when each condition should be set is listed with the condition, however, the Plant/General Manager is the final deciding factor as to when the plant will elevate or downgrade from one condition to another.

   Due to the unpredictability of a Hurricane/Tropical Storm, various plant personnel that are assigned duties/responsibilities within this plan may be on vacation. In the event that a specific person (i.e. Plant Manager, Operations Manager, Maintenance Manager etc.) is on vacation when a hurricane is forecast to make landfall in an area that would affect the plant, personnel designated to perform the normal duties of the person on vacation will also assume those duties /responsibilities assigned to that person within the MVG Hurricane Contingency Plan.

CONDITION II: (recommended to be set on June 1st at the beginning of Hurricane Season)

A. Plant Personnel will review the MVG Hurricane Policy.

B. The Operations Manager will ensure that a formal review the MVG Hurricane Policy is covered in the June Safety Meeting each year.

C. Plant Personnel should begin to monitor local weather forecasts and national weather broadcasts for early signs of Hurricane/tropical storm warnings.

D. The Plant/General Manager will call a management meeting to discuss the plant weather emergency readiness. (a special meeting does not need to called as the normal Monday Morning briefing will suffice).

E. All personnel will begin early preparations, which include plant wide housekeeping, proper stowage, and inventory.

F. The Office Manager will ensure that Calpine Corporation home office is contacted and plans made for the transfer of files should this become necessary.

G. The Maintenance and the Operations Manager shall ensure that the plant is surveyed for equipment and/or items not deemed necessary and will make arrangements to have this equipment removed from site.

H. Control Room Operators will confirm the telephone and emergency telephone numbers of employees and vendors located on the Emergency Contact List.

I. The volunteer list for the hurricane emergency crew will be posted and should be completed by no later than the end of the 2nd week of June.

CONDITION III: (recommended to be set when a hurricane/tropical storm has formed in or entered the Gulf of Mexico, and there is no immediate threat to the Site)

A. All employees and contract employees should start making family plans and preparations at home.

B. Move mobile equipment to safe area to be tied down as necessary or remove equipment from the site.

C. Remove all loose items that are not necessary to conduct normal plant operations, throughout the plant and store, i.e. air hoses, ladders, trash receptacles and etc.

D. Verify tie-downs on all portable buildings.

E. Remove all unnecessary contracted equipment from plant.

F. Order acid, caustic, and any other chemicals as needed to fill tanks respectively.

G. Remove any empty or extra gas bottles from the site.

H. The control room operator will keep good communications with AEP and Calpine Marketing Group to keep them posted from this point on of any change in plant operations as it becomes necessary.

CONDITION IV: (recommended to be set when a hurricane/tropical storm is in the Gulf and a potential landfall for the South Texas Coast has been forecasted)

A. Plant Management will discuss storm location, direction, and areas of responsibilities, plant readiness.

B. The Operations Manager will verify that provisions for the sites Hurricane Supply Cabinet are stocked for Hurricane Crew. (See Hurricane Supply List) and make any last minute arrangements as necessary.

C. The Hurricane Crew will be put on 24-hour alert status.

D. The control room operator will continue to monitor the progression of the storm.

E. The Operations Manger will closely monitor the emergency radio broadcast frequency and advise the Plant Manager of any bulletins by local authorities that are broadcasted.

CONDITION V: recommended to be set when a hurricane/tropical storm is forecast to make landfall in the immediate area within 24 hours)

A. Management will meet and discuss the Hurricane/Tropical Storm, the plans of a possible plant shutdown and evacuation and the setting of the Hurricane crew.

B. The Operations Manager will notify the Hurricane Crew to make final preparations at home and for their families, and to report back to work no later than 12 hours from the time they were put on notice.

C. The Office Manger will ensure the start of the transfer of predetermined files.

D. The Maintenance Manager will ensure the computer and server files are backed up.

E. The Office Manger will ensure that all company vehicles are filled with fuel.

F. Plant Management will make a final walk through the plant and list any descripancies.

G. The Operations Manager will ensure all vendors whose services may be needed after the hurricane has passed have been contacted and inform of the need of their services within 24 hours of the hurricane's passing.

CONDITION VI: (recommended to be set when a hurricane/tropical storm is forecast to make landfall in the immediate are **within 12 hours**)

NOTE:

IF HURRICANE FORCE WINDS IN EXCESS OF 100-MILES PER HOUR ARE EXPECTED TO REACH THE PLANT, PLANT MANAGEMENT WILL DISCUSS THE POSSIBILITY OF A CONTROL PLANT SHUTDOWN PRIOR TO THE HURRICANE WINDS REACHING THE SITE. PLANT SHUTDOWN SHOULD START 8 HOURS BEFORE BUT NO LATER THAN 6 BEFORE THE STORMS PREVAILING WINDS ARE PREDICTED TO REACH THE SITE.

A. The Hurricane Crew upon arriving on site, will report to the control room and log in and will assume the watchstation responsibilities of the plant.

B. Plant Personnel not designated as part of the Hurricane Crew and are still on site will be allowed to leave the site to complete their personal hurricane preparation plans for their home.

C. The Hurricane Crew will make a walk through of the plant to insure its readiness for storm conditions and correct any last minute discrepancies.

D. The Operations Manager will develop a final list of all plant personnel left on site and forward the list to the Local Authorities.

E. Hurricane pay in effect

F. Plant Management will meet with the Hurricane Crew and discuss strength of the storm, possible plant shutdown and evacuation.

G. If Plant Management determines that the plant needs to be shutdown due to hurricane force winds in excess of 100 miles are expected to reach the plant, then, the Hurricane Crew will shutdown the plant as follows:

   a. If the plant is in a 2x1 status, then, one of the CTs will be shutdown no less than 6 hours prior to the excessive hurricane winds are forecast to reach the plant.

   b. If the plant is already in a 1x1 status, then, the plant will remain so until 4 hours before the excessive hurricane winds are forecasted to reach the

plant at which time hurricane crew will shutdown the remaining CT and the Steam Turbine.

H. A cell phone and a spare battery should be made available for the control room if possible.

CONDITION VII: (recommended to be set when a hurricane/tropical storm is forecast to make landfall in the immediate area **within 8 hours**)

A. In the event winds in excess of **120 mph** are forecast to reach the site, then the Hurricane Crew will commence a normal Plant Shutdown and upon a safe shutdown of the plant, the on watch Control Room Operator will implement plans for the safe evacuation of the Hurricane Crew.

B. No one **SHALL** venture out into the plant alone, and only teams of two may go out in an emergency with the following equipment: hard hats with chin straps, rubber boots, gloves, safety glasses, and foul weather gear.

C. If evacuation becomes necessary, the Control Room Operator will notify Local Authorities of the Hurricane Crews plans for evacuation.

CONDITION VIII: (recommended to be set after a hurricane/tropical storm has passed and the Plant/General Manager has issued an ALL CLEAR)

A. Following the passing of the hurricane and the subsiding of any floodwaters, the Hurricane Crew if still on site, will tour the plant to assess the damage that was sustained by the plant. Pictures should be taken of damage if possible.

B. In the event that the Hurricane Crew was required to evacuate the site, then, when it is safe to return, the hurricane crew will assess the plant damage and make preparations for restarting the plant.

C. As soon as practical, all employees who were released from work should contact the plant and give a contact number to the Control Room Operator and their availability to report to work.

D. All individuals that are on the job site or entering the job site must take extreme caution.

E. Due to the possibility of water action and undermining, care must be taken when driving or walking in the plant.

F. There could be a possibility of electrical shock due to flooding of cable pits, motor starters and switches. Extreme care must be taken when working near this equipment.

G. Pollution of drinking water due to high tides could be possible. Until the city has given the all clear to the potable water system, bottled water only should be consumed.

H. There may be items of debris blown partially free or hanging precariously. Broken glass will pose a problem on the ground. Special care must be taken when walking under equipment.

I. Due to flooding waters, animals and or insects may have been displaced. Extreme caution must be taken when touring the site or when opening any outside cabinets.

CONDITION I: (recommended to be set on Nov. 30th at the end of Hurricane Season)

A. Normal Plant Operations

B. Commence evaluation of the Plant for Cold Weather Season

3. **Hurricane Crew:**
Magic Valley Generating Station will attempt to staff the Hurricane Crew with volunteers, however in as such that there are not enough volunteers, Plant Management shall designate operations personnel to man the station until such time that site conditions have returned to normal or if an evacuation of the plant becomes necessary.

a. At the beginning of each Hurricane Season, a list of personnel volunteering for the Station's Hurricane Crew will be generated by the Operations Manager. A copy of this list will be maintained in the control room's contact book.

b. Volunteers for the Station's Hurricane Crew will be allowed to leave the plant 36-24 hours prior to o hurricane making landfall to ensure all of their personal and family interests are safely secured.

Magic Valley Hurricane Crews 2021

June 1st 2021 – November 30th 2021

CALPINE

B Crew

Ernie Ortiz

Tony Ramirez

Jose Salinas

D Crew

Jay Gonzalez

Fernando Garza

Hualberto Garcia

Alternate Crew

Javier Garcia

Jose Garcia

Rick Barber

Maintenance

Alfredo Elicerio

Rogelio Garza

Adrian Rosales

Hurricane Supply List

Essentials:

- ❑ Battery-operated radio
- ❑ Flashlight
- ❑ Extra batteries

Do not include candles, which cause more fires after a disaster than anything else

Water:

- ❑ 3 gallons/person, minimum, in a food-grade, plastic container
- ❑ Additional water for sanitation

Food:

Minimum 3-day supply of non-perishable food that requires no refrigeration or preparation and little or no water.

- ❑ Dry cereal
- ❑ Peanut butter
- ❑ Canned fruits
- ❑ Canned vegetables
- ❑ Canned juice
- ❑ Ready-to-eat canned meats
- ❑ Ready-to-eat soups (not concentrated)
- ❑ Quick energy snacks, graham crackers

First Aid Kit:

- ❑ Scissors
- ❑ Sunscreen
- ❑ Tweezers
- ❑ Cleansing agent/soap
- ❑ Latex gloves (2 pairs)
- ❑ Tongue blades (2)
- ❑ Moistened towelettes
- ❑ Assorted sizes of safety pins
- ❑ 2" sterile gauze pads (4-6)
- ❑ 4" sterile gauze pads (4-6)
- ❑ 2" sterile roller bandages (3 rolls)
- ❑ 3" sterile roller bandages (3 rolls)
- ❑ Triangular bandages (3)
- ❑ Sterile adhesive bandages in assorted sizes
- ❑ Aspirin or non-aspirin pain reliever
- ❑ Antacid (for stomach upset)

Tools and Supplies:

- ❑ Screwdriver set
- ❑ Instant Liters
- ❑ Razors
- ❑ Ziplock storage bags
- ❑ Toothpaste
- ❑ Caution Tape
- ❑ Matches in a waterproof container
- ❑ Tarps
- ❑ Hand Wipes
- ❑ Plastic storage containers
- ❑ Heavy cotton or hemp rope
- ❑ Utility Knife
- ❑ Non-electric can opener,
- ❑ Mess kits, or paper cups, plates and plastic utensils
- ❑ Tape, duct and plumber's tape or strap iron
- ❑ Patch kit and can of seal-in-air for tires
- ❑ Tie Wraps

Sanitation:

- ❑ Disinfectant
- ❑ Household chlorine bleach
- ❑ Soap, liquid detergent
- ❑ Personal hygiene items
- ❑ Toilet paper, towelettes, paper towels
- ❑ Plastic garbage bags, ties (for personal sanitation uses)

Clothing and Bedding:

- ❑ Rain gear
- ❑ Hat and gloves
- ❑ Blankets or sleeping bags
- ❑ One complete change of clothing and footwear per person

Important Documents:

- ❑ Important telephone number Calpine Directory/Employee Emergency contact list.

Entertainment:

- ❑ Games and Books
- ❑ Playing Cards

Emergency Contact Numbers:

The following is a list of phone numbers to be used in the event of Hurricane Emergencies.

Central Region Office (CRO):

Corporate	[redacted]
Northbrook	
CRO	
CRO/CNG I.S. (late night on-call)	
CRO Dispatch	
Calpine Gas Pipeline	

Calpine MVG:

Robert Latham	General/Plant Manager	[redacted]
Nora Gutierrez	Business Manager	
Fidel Salinas	Operations Manager	
Javier Robles	Maintenance Manager	
Javier Robles	Plant Engineer	
Albert Pena	EHS Technician	
Gilbert Franco	Parts and Warehouse	

Misc.:

Fire or Medical Emergency		911
Safety/Health Regional Manager	????	[redacted]
Calpine Turbine/Maintenance	Pete Sobieski	
Environmental Manager	Patrick Blanchard	
Environmental Specialist	Jaron Bergin	
HCID Water District	Richard Garza	
AEP North Edinburg	Substation	
Edinburg Water Treatment Plant	Gabriel Badillo	
Edinburg WTP Emergency Cont.	Joe Arguian	
Calpine Pipe Line Operator II	Richard Gonzales	
Calpine Pipe Line Operator III	Ronny Miller	

4. General Hurricane Information (including Hurricane Tracking Map):

The National Oceanic and Atmospheric Administration defines hurricane as a tropical cyclone, in which winds reach constant speeds of 74 miles per hour or more, and blows in a large spiral around a relatively calm center, or the eye of the hurricane. Simply stated, hurricanes are giant whirlwinds in which air moves in a large tightening spiral around a center of extreme low pressure, reaching maximum velocity in a circular band extending outwards 20 to 30 miles out from the rim of the eye. This circulation is counterclockwise in the Northern Hemisphere. Near the center, hurricane winds may gust to more than 200 miles per hour.

To better categorize hurricane and the damage caused by them, the Saffir/Simpson Hurricane scale (SSHS) was developed to give an estimate of the potential property damage and flooding that can be expected from a hurricane. This scale, ranging from one to five is based on the hurricane's intensity.

1. **Category 1 Hurricane** - winds are expected to be between 74-95 mph and a storm surge between 4-5 feet above normal. Damage primarily to shrubbery, trees, foliage, and unanchored homes. No real damage to other structures. Some damage to poorly constructed signs. Low-lying coastal roads inundated, minor pier damage, some small craft in exposed anchorage torn from moorings.
2. **Category 2 Hurricane** - winds are expected to reach between 96-110 mph and a storm surge between 6-8 feet above normal. Considerable damage to shrubbery and tree foliage; some trees blown down. Major damage to exposed mobile homes. Extensive damage to poorly constructed signs. Some damage to roofing materials of buildings; some window and door damage. No major damage to buildings. Coast roads and low-lying escape routes inland cut by rising water 2 to 4 hours before arrival of hurricane center. Considerable damage to piers. Marinas flooded. Small craft in unprotected anchorages torn from moorings. Evacuation of some shoreline residences and low-lying areas required
3. **Category 3 Hurricane** - winds are expected to reach between 111-130 mph and a storm surge between 9-12 feet above normal. Foliage torn from trees; large trees blown down. Practically all poorly constructed signs blown down. Some damage to roofing materials of buildings; some wind and door damage. Some structural damage to small buildings. Mobile homes destroyed. Serious flooding at coast and many smaller structures near coast destroyed; larger structures near coast damaged by battering waves and floating debris. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives. Flat terrain 5 feet of less above sea level flooded inland 8 miles or more. Evacuation of low- lying residences within several blocks of shoreline possibly required.
4. **Category 4 Hurricane** -winds are expected to reach between 131-155 mph and a storm surge between 13-18 feet above normal is also expected. Shrubs and trees blown down; all signs down. Extensive damage to roofing materials, windows and doors. Complete failures of roofs on many small residences. Complete destruction of mobile homes. Flat terrain 10 feet of less above sea level flooded inland as far as 6 miles.

Major damage to lower floors of structures near shore due to flooding and battering by waves and floating debris. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives. Major erosion of beaches. Massive evacuation of all residences within 500 yards of shore possibly required, and of single- story residences within 2 miles of shore.

5. **Category 5 Hurricane** - winds are expected to be equal to or greater than 156-mph and a storm surge equal to or greater than 19 feet above normal. Shrubs and trees blown down; considerable damage to roofs of buildings; all signs down. Very severe and extensive damage to windows and doors. Complete failure of roofs on many residences and industrial buildings. Extensive shattering of glass in windows and doors. Some complete building failures. Small buildings overturned or blown away. Complete destruction of mobile homes. Major damage to lower floors of all structures less than 15 feet above sea level within 500 yards of shore. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives. Massive evacuation of residential areas on low ground within 5 to 10 miles of shore possibly required.

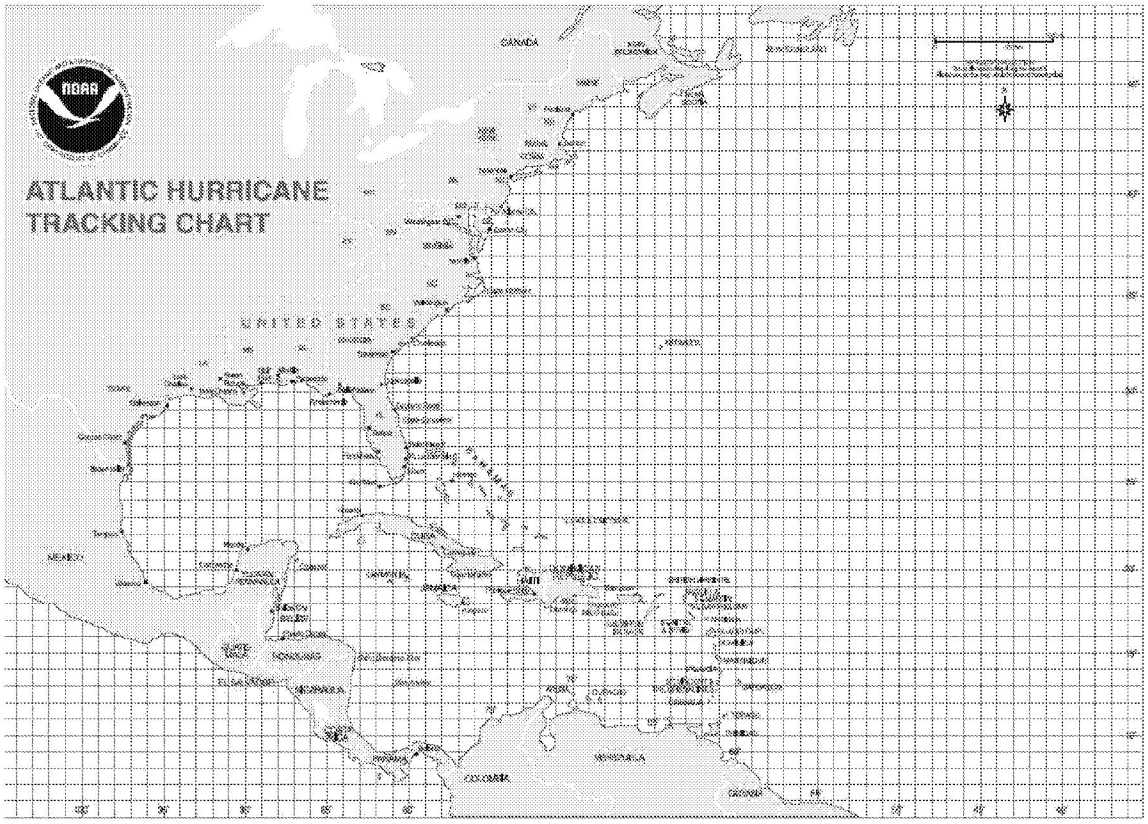
6. **Tropical Depression – a** tropical cyclone with maximum sustained surface winds of less than 39 mph.

7. **Tropical Storm** - tropical cyclone whose maximum sustained surface winds reach at least 39 mph typically called a "tropical storm" and assigned a name

8. **HURRICANE WARNING:** issued for that part of the coast to indicate that sustained winds of at least 74 mph are expected within 24 hours or less.

9. **HURRICANE WATCH:** issued for that part of the coast to indicate the possibility that you could experience hurricane conditions within 36 hours.

10. **MAXIMUM SUSTAINED SURFACE WINDS:** According to the National Hurricane Center (NHC) and the Joint Typhoon Warning Center (JTWC) of the USA, a 1 min averaging period of wind speed is used to record the maximum sustained winds


ATLANTIC HURRICANE
TRACKING CHART
UNITED STATES
CANADA
MEXICO
COLOMBIA
VENEZUELA

PASADENA HURRICANE PROCEDURE

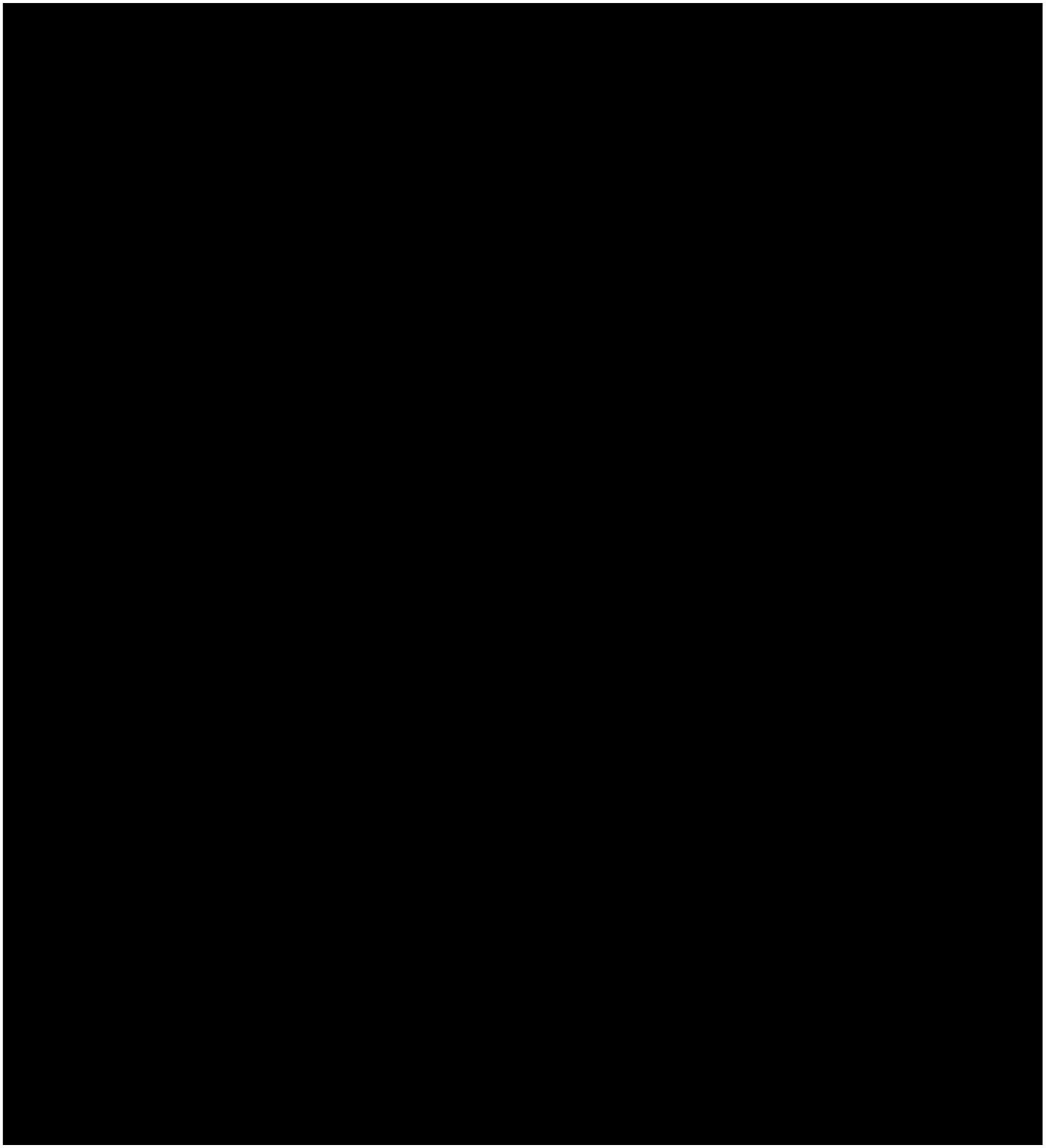
TABLE OF CONTENTS

2. HURRICANE POLICY:

(a) It is the intention of management to maintain the operations of the plant until such time that the safety of plant personnel and/or equipment is threatened or until the plant is unable to export power due to transmission line problems.

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

(c) The Plant Manager or his designee will make final decisions as to what steps will be taken and when they occur.



[redacted]

4. PURPOSE:

(a) This Hurricane Procedure has been developed to assure that the Pasadena Cogeneration plant and its employees are prepared in the event a tropical storm or hurricane weather condition should threaten to strike the upper Texas coast.

(b) This procedure provides information and outlines steps to protect personnel and equipment against the possible destruction of 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 Pasadena plant relies on the National Weather Service broadcasts for the latest changing weather conditions and the probability values for possible landfall of a tropical storm or hurricane.

(c) For better preparedness and smooth transitions in case of the threat of a tropical storm or hurricane, this procedure has been divided into six phases of readiness. These six phases have been developed in conjunction with the storm threat and Chevron Phillips hurricane procedures. The six phases and their definitions are listed below.

1. **PHASE I:** the beginning of hurricane season. (JUNE 1st)

2. **PHASE II: STORM/HURRICANE ALERT** A tropical storm/hurricane has formed and is threatening to enter or has entered the Gulf of Mexico but is not an immediate threat.

3. **PHASE III: STORM/HURRICANE WATCH** A tropical storm/hurricane has entered the Gulf of Mexico and has become a potential threat to the immediate area within the next 36 hours.

4. **PHASE IV: STORM/HURRICANE WARNING** A tropical storm/hurricane is predicted to make landfall in the immediate area within a 24-hour period. Put the HURRICANE CREW on 16-hour notice.

5. **PHASE V: HURRICANE DUTY** A tropical storm/hurricane will make landfall within the next 12 hours. Set the HURRICANE CREW watch. Begin plans for plant evacuation.

6. **PHASE VI: POST HURRICANE** The time following the hurricane until the Plant Manager or his designee sounds the all clear.

5. PHASE 1:

JUNE 1st, the beginning of hurricane season.

(a) All personnel begin closely monitoring local weather forecasts and national weather broadcasts for early signs of Tropical Storm warnings.

(b) All personnel will review the Hurricane Procedure.

(c) The Plant Manager will call a management meeting to discuss the plant and personnel weather emergency readiness.

(d) All personnel will begin early preparations, which include, plant wide housekeeping, proper stowage, and inventory. This also includes readiness at home as well.

(e) The Operations Manager will contact the Calpine Corporation home office. Plans should be made for the transfer of files should this become necessary.

(f) The Operations Manager and the Maintenance Manager will survey the plant for equipment and/or items not deemed necessary, and should make arrangements to have this equipment removed from site.

(g) All OP Tech III's will confirm the telephone and emergency telephone numbers of employees and vendors which will be included in this manual.

(h) The warehouse will maintain during hurricane season a stock of the necessary emergency supplies.

(i) The volunteer list for the hurricane emergency crew will be posted and should be completed by no later than the end of May.

6. PHASE II: TROPICAL STORM/HURRICANE ALERT:

A tropical storm/hurricane has formed and is threatening or has entered the Gulf of Mexico, but is not an immediate threat to our area.

Management will meet and discuss the following:

(a) Storm location and direction of travel.

(b) Areas of responsibility.

(c) Plant readiness and implementation of Phase II action.

(d) Formally implement Phase II.

Once Phase II is formally implemented take the following steps:

(a) The control room operator will announce all weather bulletins.

(b) All employees and contract employees should start making family plans and preparations at home: at least 36 hours before storm makes landfall.

(c) The following in-plant preparations should be implemented:

1. Move mobile equipment to safe area to be tied down as necessary.

2. Remove all loose items throughout the plant and store, i.e. air hoses, fire extinguishers, ladders.

3. All breaker enclosure doors and electrical panels located outside will be wired shut.

4. Verify tie-downs on all portable buildings.

5. Remove all unnecessary contracted equipment from plant.

6. Order acid, caustic, and any other chemicals as needed to fill tanks respectively.

7. Ensure adequate CO2 is on-site in the event CT-1 generator must be purged of Hydrogen.

8. Remove any empty or extra gas bottles from the site.

9. The Operations Manager will contact Chevron Phillips Superintendent at [redacted] and determine their intentions. He will advise them that any change in their operation status must be communicated through our control room operator.

10. The Control Room Operator (CRO) will keep good communications with Chevron Phillips night Superintendent at [redacted], Center Point Energy, and Calpine Energy Services to keep them posted from this point on of any change in our operations as becomes necessary.

11. The CRO will contact all vendors whose services may be needed after the storm has passed and inform them we may be in need of their services within 24 hours of a storms passing.

7. PHASE III: TROPICAL STORM/HURRICANE WATCH:

A tropical storm/hurricane is in the Gulf of Mexico and a potential threat.

Management will meet and discuss the following:

(a) Storm location and predictions.

(b) Estimated Time of Arrival of storm should it be determined if headed in our direction.

(c) Estimated time that a plant evacuation should be ordered.

(d) Areas of responsibility.

(e) Plant readiness and the formal implementation of Phase III action.

Once Phase III is formally implemented take the following steps:

(a) The Operations Manager will have supplies stocked for Hurricane Duty personnel.

(b) The CRO on duty will contact all off duty personnel to advising them of the status of the plant and to request information concerning their availability should they be needed.

(c) The CRO on duty will contact gas suppliers to determine the status of gas availability.

(d) The Hurricane Duty Crew will be put on 24-hour alert status.

(e) The CRO will continue to monitor the progression of the storm and continually update the Plant Management.

(f) The Chevron Phillips emergency broadcast radio will be closely monitored for their plant status changes. In order to determine the steam and power demands, contact the Chevron Phillips night Superintendent at [redacted].

(g) The CRO will update the Plant Management of any changes in status of Chevron Phillips, gas suppliers, Calpine Energy Services, and CENTER POINT ENERGY.

(h) The CRO will closely monitor the emergency radio broadcast frequency and advise the Plant Management of any bulletins by local authorities that are broadcast.

(i) The CRO will keep a thorough log of all broadcasts and happenings as they occur for study at a later date.

8. PHASE IV: TROPICAL STORM/HURRICANE WARNING:

A tropical storm/hurricane is predicted to make landfall in the immediate area within a 24-hour period. Hurricane force winds are imminent.

Management will meet and discuss the following:

(a) Storm location, size, category, predictions and possible storm surge.

(b) Estimated Time of Arrival of storm.

(c) Employee family readiness.

(d) Plant and Chevron Phillips readiness, CENTER POINT ENERGY, gas suppliers and Calpine Energy Services communications, evacuation times, implementation of the hurricane crew, local authorities emergency information, and possibility of plant shutdown.

(e) Formal implementation of PHASE IV.

Once PHASE IV is formally implemented take the following steps:

(a) The Operations Manager and/or Maintenance Manager will notify the Hurricane Duty crew to make final preparations at home and for their families, and to report back to work not later than 8 hours from the time they were put on notice.

(b) The Plant Administrator will begin the transfer of predetermined files.

(c) The Operations Manager will make computer back-up discs.

(d) Cover computers and DPU's with plastic to protect against water damage.

(e) The CRO on duty will contact Pasadena City Fire Department and provide them a list of the employees left on site.

(f) The Operations Manager will discuss with Chevron Phillips night Superintendent at [redacted] steam and power demands, and availability of water.

(g) The Operations Manager will contact the plant gas suppliers and inform them of operations plans and gas needs. Emergency numbers will be exchanged.

(h) The Warehouse Clerk will verify and/or fill all company vehicles with fuel.

(i) The Operations Manager and/or Maintenance Manager will develop a final list of all plant personnel and emergency telephone numbers where they may be reached for distribution.

(j) The CRO will check the status of radios and batteries.

(k) The Hurricane Crew upon returning to the plant site will do the following:
1. Report to the control room and log in.
2. Make a plant walk through.
3. Meet with the plant management and be briefed on plans, strength of the storm, possible plant shutdown and evacuation.
4. Relieve the operations and maintenance duty personnel.
5. Continue to monitor weather updates throughout the storm.

9. PHASE V: HURRICANE DUTY:

A tropical storm/hurricane is predicted to make landfall in the immediate area within a 12 hour period.

NOTE: IF HURRICANE FORCE WINDS ARE EXPECTED IN EXCESS OF 100 MILES PER HOUR, IT IS THE POLICY OF PASADENA COGENERATION TO BEGIN A CONTROLLED PLANT SHUTDOWN STARTING WITHIN 10 HOURS OF THE STORM'S PREVAILING WINDS REACHING OUR AREA. REFER TO THE EMERGENCY PLANT SHUTDOWN PROCEDURE FOR PROPER PLANT SHUTDOWN SEQUENCE.

(a) At 12 hours from landfall, the (Hurricane Duty Crew) CRO will assume the responsibilities of the plant.

(b) The CRO will make a walk-through of the plant to ensure its readiness for storm conditions.

(c) The CRO will inventory the supplies to insure an ample supply of food, water, and other necessities he feels are necessary for his crew and makes any necessary adjustments.

(d) The CRO will do everything within his power to ensure the safety of his crew.

(e) In the event winds in excess of 100 mph are expected, the CRO will follow the shutdown procedure written in this procedure.

(f) The CRO will maintain his crew inside the control building and not allow any venturing outside during the high winds.

(g) No ***one*** person shall venture out into the plant alone; tag teams of two may go out in an emergency with the following equipment: hard hats with chin straps, safety harness with bung cords of no more than 10 feet in length, rubber boots and gloves, safety glasses with side shields, foul weather gear.

(h) In the event winds in excess of 120 mph are expected, upon the safe shutdown of the plant, the CRO will implement plans for the safe evacuation of his crew to a turbine enclosure.

(i) If evacuation becomes necessary, the CRO will notify Pasadena City Fire Department of his plans for evacuation.

NOTE: IT IS IMPORTANT TO REMEMBER THAT THE EYE OF A HURRICANE THOUGH CALM CAN BE DECEIVING. DO NOT TRUST THIS CALM WITH YOUR LIFE OR YOU MAY FIND YOURSELF TRAPPED IN THE MIDDLE OF A HURRICANE.

10. PHASE VI: POST HURRICANE:

The time following the passage of a hurricane until the Plant Manager or his designee issues the all clear.

Following the passage of the hurricane and the subsidence of possible floodwaters, the following should be done:

(a) As the storm passage allows, the Hurricane Duty crewmembers will tour the plant to assess the damage incurred. Pictures should be taken of damage.

(b) As soon as possible, each employee should contact the plant. A contact number should be given to the CRO .Each employee should inform the CRO as to his or her availability to report to work.

(c) All individuals that are on the job site or entering the job site must take extreme caution. Some of these cautions are as follows:

1. Due to the possibility of water action and undermining, care must be taken when driving or walking in the plant.

2. There could be a possibility of electrical shock due to flooding of cable pits, motor starters and switches. Extreme care must be taken when working near this equipment.

3. Pollution of drinking water due to high tides could be possible. Until the city has given the all clear to the potable water system, bottled water only should be consumed.

4. There may be items of debris blown partially free or hanging precariously. Broken glass will pose a problem on the ground. Special care must be taken when walking under equipment.

11. DUTIES AND RESPONSIBILITIES:

Responsibilities during a hurricane emergency will follow normal operating routine. Special responsibilities are listed below.

Employees:

(a) Report to work as scheduled until such a time that weather conditions make it impractical or management or local law enforcement otherwise advises you.

(b) After a storm: All employees who have evacuated the area should remain outside of storm damaged area until the all clear is given by the local law enforcement agencies. In some cases it may be necessary to show proof that you live or work in the area to get past roadblocks that may be set up.

(c) Volunteers for the Hurricane Duty Crew should have all of their personal and family interests safely secured within 24 hours of a storms threatening landfall.

(d) Stay in touch with management for scheduling changes.

Plant Management:

(a) Meet and discuss objectives/options.

(b) Direct all plant activities.

(c) Initiate all phases of hurricane plan as necessary.

(d) Release all non-essential personnel when/if appropriate.

12. HURRICANE DUTY VOLUNTEER LIST

During a hurricane, a crew of 9 members will be designated from personnel on site and or the volunteer list. The volunteers are as follows:

Operations	**Alternates**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
I&E	
_____	_____
_____	_____
Mechanical	
_____	_____

Note: 2 OP Tech III's, 4 OP Tech II's, 1 Mechanical and 2 I&E.

13. EMERGENCY SHUTDOWN PROCEDURE:

This shutdown procedure is designed to give Pasadena Cogeneration plant maximum time allowable for safe shutdown and evacuation if necessary and still give enough flexibility in our plan to stay on line in case of change of direction or force of the incoming hurricane. In the event the maximum sustained winds are predicted to be greater than 100 miles per hour, and the hurricane's course is predicted within a 50-mile radius of Pasadena City the following steps will be taken with management approval. It is important to monitor the National Oceanic & Atmospheric Administration (www.noaa.gov) weather radio broadcasts for updates during and after each step is taken in case of change.

(a) Shut down CT-3 8 hours before greater than 100 mph winds are expected to hit Pasadena City.

(b) Shut down CT-2 and ST-2 6 hours before greater than 100 mph winds are expected to hit Pasadena City.

(c) Shut down CT-1 and ST-1 3 hours before greater than 100 mph winds are expected to hit Pasadena City.

(d) Maintain auxiliary boiler operations to supply Chevron Phillips with steam until no longer safe or needed.

Prior to beginning shutdown procedures notify:

Dennis Coates-Plant Manager
Cody Thompson-Operations Manager
John Swinney-Maintenance Manager

[redacted]

14. HURRICANE SUPPLIES

This list of items should be maintained in the warehouse during Hurricane Season and may be re-inventoried each year by June 1st.

1 - Roll of 1/2" rope

1 - Roll of 1/4" rope

6 - Rolls of duct tape

6 - Rolls of barricade tape

1 - Coil of #9 wire

1 - Roll of plastic

Burner propane stove

Air mattresses

Hurricane Supply Closet Inventory

Amount		Item
3	boxes	lasagna noodles
3	jars	Rague meat sauce
3	boxes	Velveeta shells and cheese with bacon
2	boxes	Homestyle ham and cheese
1	boxes	Homestyle Country chicken
2	bags	pinto beans
2	bags	spaghetti noodles
1	box	rice
1	can	parmesan cheese
6	cans	chicken noodle soup packs
1	pkg	party mix
2	cans	Bush baked beans
2	pkg	fruit Jell-O packs
2	pkg	fruit cocktail
2	cans	whole potatoes
2	cans	Veg All
2	bags	vegetable soup starters
2	cans	beef stew
2	cans	chicken and dumplings
2	cans	tamales
2	pkg	tuna starter kits
3	cans	bar-b-que pork
4	cans	ham
2	cans	chili
4	cans	red beans
2	cans	potato and ham chowder soup
2	boxes	individual cookies
2	boxes	crackers
1	6-pkg	orange juice
1	4-pkg	grape juice
1	jar	dried onions
2	12-pkg	pudding
1	bottle	olive oil
2	bags	pinto bean seasoning
4	boxes	breakfast bars

2	jars	pancake mix
2	jars	mixed nuts
2	boxes	popcorn
1	pkg	Pringles

15. HURRICANE AWARENESS INFORMATION:

(a) If you live or work in the Houston/Galveston area, you must be alert and prepared for the destructive force of a hurricane or tropical storm. The question in this area is not if a hurricane will hit; but, when will a hurricane hit?

(b) The National Oceanic and Atmospheric Administration defines hurricane as a tropical cyclone, in which winds reach constant speeds of 74 miles per hour or more, and blow in a large spiral around a relatively calm center, or the eye of the hurricane. Simply stated hurricanes are giant whirlwinds in which air moves in a large tightening spiral around a center of extreme low pressure, reaching maximum velocity in a circular band extending outwards 20 to 30 miles out from the rim of the eye. This circulation is counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere. Near the center hurricane winds may gust to more than 200 miles per hour.

(c) Because of the unpredictability and extreme danger of these storms, the Saffir/Simpson Hurricane Scale (SSHS) was developed to give an estimate of the potential property damage and flooding that can be expected along the coast from a hurricane. This scale, ranging from one to five is based on the hurricane's present intensity.

1. **Class One.** Winds 74-95 mph or storm surge 4-5 feet above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal road flooding and minor pier damage.

2. **Class Two.** Winds 96-110 mph or storm surge 6-8 feet above normal. Some roofing material, door, and window damage to buildings. Considerable damage to vegetation, mobile homes, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of center. Small craft in unprotected anchorages break moorings.

3. **Class Three.** Winds 111-130 mph or storm surge 9-12 feet above normal. Some structural damage to small residences and utility buildings with a minor amount of curtain wall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating

debris. Terrain continuously lower than 5 feet may be flooded inland 8 miles or more.

4. **Class Four.** Winds 131-155 mph or storm surge 13-18 feet above normal. More extensive curtain wall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Major damage to lower floors of structures near the shore. Terrain continuously lower than 10 feet above sea level may be flooded inland as far as 6 miles.

5. **Class Five.** Winds 155 mph or storm surge greater than 18 feet above normal. Complete roof failure on many residences and industrial buildings. Some complete building failure with small utility buildings blown over or away. Major damage to lower floors of all structures located less than 15 feet above sea level and within 500 yards of the shoreline. Massive evacuation for residential areas on low ground within 5-10 miles of shoreline may be required.

16. HURRICANE TERMINOLOGY:

- **GALE WARNINGS:** When winds of 38-55 MPH are expected.
- **HURRICANE:** A closed low-pressure circulation in the tropics with winds in excess of 74 MPH.
- **HURRICANE WARNING:** Hurricane force winds or high tides and seas are expected to strike this area within 24 hours.
- **HURRICANE WATCH:** Hurricane may threaten this area within 24 to 36 hours.
- **SMALL CRAFT ADVISORY:** When issued in conjunction with possible hurricane conditions for this area, advises a small craft operator to take precautions and not to venture into the open Gulf.
- **TROPICAL DEPRESSION:** An area of disturbed weather in the tropics that has the potential of storm development.
- **TROPICAL STORM:** A closed low-pressure circulation at the surface in the tropics with winds 39 to 73 MPH.

17. Vendor List and Phone Numbers

U.S. Filter Corp.

GE Mobile (ext.2202)

Air Gas

Brenntag Southwest, Inc.

Shrieve Chemical

ChemTreat, Inc.

Garner Environmental

USA Environmental, L.P.

Safety-Kleen

[redacted]

TABLE OF CONTENTS

1. Purpose:

The purpose of this procedure is to provide guidance to the plant personnel in preparation for a tropical storm or hurricane. The Hurricane Procedure has been developed to ensure the protection of plant employees and assets.

2. Scope:

It is the intention of plant management to maintain the operations of the plant until such time that the safety of plant personnel and/or equipment is threatened or until the plant is unable to export power due to transmission line problems.

Should it become necessary to shut the plant down and evacuate the area, a minimum number of volunteers (6), may be asked to remain on the plant site. Plant Management will make the final decision as to whether the plant will be evacuated by all personnel and left unmanned.

Plant Management will make final decisions as to what steps will be taken and when they occur.

This procedure is intended to provide information and outlines steps to protect personnel and equipment against the possible destruction by a tropical storm, hurricane or severe weather condition, 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 the National Weather Service broadcasts for the latest changing weather conditions and the probability values for possible landfall of a tropical storm or hurricane.

Six phases of readiness have been developed in conjunction with the storm threat and their definitions are listed in the DEFINITIONS section below.

3. References

Calpine Corp. Business Continuity Plan

Site Spill Prevention Control and Counter Measures Plan

Calpine Corp. Calpine Corp Emergency Communications Procedures

Site Emergency Action Plan

Calpine Corp. Inclement Weather and natural Disaster Policy

Site Integrated Contingency Plan

4. Definitions:

PHASE I The beginning of hurricane season. (JUNE 1st)

PHASE II STORM/HURRICANE ALERT A tropical storm/hurricane has formed and is threatening to enter or has entered the Gulf of Mexico but is not an immediate threat.

PHASE III STORM/HURRICANE WATCH A tropical storm/hurricane has entered the Gulf of Mexico and has become a potential threat to the immediate area within the next 36 hours.

PHASE IV STORM/HURRICANE WARNING A tropical storm/hurricane is predicted to make landfall in the immediate area within a 36 hour period.

PHASE V HURRICANE DUTY A tropical storm/hurricane will make landfall within the next 12 / 24 hours. Set the HURRICANE CREW watch. Begin plant preparations for possible shutdown and evacuation.

PHASE VI POST HURRICANE The time following the hurricane until the Plant Manager sounds the all clear.

5. Responsibilities:

1. Plant management is responsible for the safe execution of this procedure.
2. Plant management is responsible for providing for resources necessary to secure the facility and provide the supplies needed to support operations should the plant remain staffed during an event.
3. Plant management is responsible for communicating with Calpine Corp. and other outside entities to provide the status of the facility.
4. Plant management is responsible for the return to normal operations of the facility.
5. Plant employees are responsible for providing resources for the stabilization, removal, strapping, covering, and securing of equipment located at the facility to prevent damage to the equipment and materials.
6. Plant operations is responsible for the safe operations of facility including shutdown, start-up, and damage assessment.
7. Plant employees are responsible for maintaining the daily housekeeping of the facility and for continuously conducting a survey of facility to identify and secure all loose materials, equipment or debris that could become airborne.
8. All employees will establish and maintain contact with plant management during the activation of this procedure.

NOTE: Evacuation – If road blocks will not allow Calpine essential employees to re-enter the area and Calpine Management has deemed it safe to re-enter, notify your manager. Your Calpine ID badge should be all the proof you need to re-enter the city.

6. General Requirements:

1. PHASE 1: JUNE 1st, the beginning of hurricane season.

    a. All personnel begin closely monitoring local weather forecasts and national weather broadcasts for early signs of Tropical Storm warnings.

    b. All personnel will review the Hurricane Procedure, which will be formally reviewed in the June Safety Meeting every year.

    c. The Plant Manager or designee will call a management meeting to discuss the plant emergency readiness.

    d. Plant management will identify outside resources that may be needed to implement the Hurricane procedure. (See Attached).

    e. All personnel will begin early preparations, which include, plant wide housekeeping, proper stowage, and inventory. This also includes readiness at home as well.

    f. Plant management will contact the Calpine Corporation home office. Plans should be made for the transfer of files should this become necessary.

    g. Plant management will survey the plant for equipment and/or items not deemed necessary, and should make arrangements to have this equipment removed from site.

    h. Plant Management will confirm and update the telephone and emergency telephone numbers of employees and vendors. (See Attached.)

    i. The warehouse will maintain an adequate stock of the necessary emergency supplies during hurricane season (See Attached.)

    j. The volunteer list for the hurricane emergency crew will be posted and should be completed by no later than the end of May. During a hurricane, a minimum crew of (6) members will be designated from the volunteers on the list.

    k. Plant Materials Technician will contact all vendors whose services may be needed after the storm has passed and inform them we may need their services within 24 hours of a storm's passing. (See Attached.)

2. **PHASE II: TROPICAL STORM/HURRICANE ALERT:** A tropical storm/hurricane has formed and is threatening or has entered the Gulf of Mexico, but is not an immediate threat to our area.

   a. **Management will meet and discuss the following:**

      i. Storm location and direction of travel.

      ii. Assign areas of responsibility.

      iii. Assess plant readiness and implementation of Phase II action.

      iv. All employees and contract employees should start making family plans and preparations at home: at least 36 hours before storm makes landfall.

   b. **The following in-plant preparations should be implemented:**

      i. Move mobile equipment to safe area to be tied down as necessary.

      ii. Remove all loose items throughout the plant and store, i.e. air hoses, fire extinguishers, ladders.

      iii. Verify tie-downs on all portable buildings.

      iv. Remove all unnecessary contracted equipment from plant.

      v. Order acid, caustic, and any other chemicals as needed to fill tanks respectively.

      vi. Remove any empty or extra gas bottles from the site.

   c. Plant management will maintain communications with steam host, Calpine Corporate Offices, and other outside entities to keep them posted from this point on if any change in our operations become necessary.

3. **PHASE III: TROPICAL STORM/HURRICANE WATCH:** A tropical storm/hurricane is in the Gulf of Mexico and a potential threat.

   a. **Management will meet and discuss the following:**

      i. Storm location and predictions

      ii. If applicable, estimated Time of storm arrival in our direction.

      iii. If applicable, estimated time that a plant evacuation should be ordered.

      iv. Areas of responsibility

      v. Assess plant readiness and the formal implementation of Phase III action.

      vi. Evaluate the activation and availability of the "Hurricane Crew".

   b. **Once phase III is formally implemented take the following steps:**

      i. Plant management will verify company vehicle fuel tanks are full.

      ii. Operations will check the status of radios and batteries.

      iii. Operations will ensure that emergency generator diesel fuel tank (if applicable) and storage tanks are full.

      iv. Operations will inventory Hurricane Supplies to ensure an ample supply of food, water and other necessities are available for Hurricane Duty personnel.

      v. Operations will contact Calpine Gas Control to determine the status of gas availability.

      vi. The Hurricane Duty Crew will be put on 24-hour alert status or plant management will declare a total plant evacuation and the on-duty crew will make preparations for such.

      vii. Plant management will continue to monitor the progression of the storm and continually update the plant personnel.

      viii. The control room operator will update plant management of any changes in status of Steam host, Calpine Gas Control, and CES.

      ix. Operations will closely monitor the emergency radio broadcast frequency and advise plant management of any bulletins by local authorities that are broadcast.

4. **PHASE IV: TROPICAL STORM/HURRICANE WARNING:** A tropical storm/hurricane is predicted to make landfall in the immediate area within a 24-hour period. Hurricane force winds are imminent.

   a. **Plant Management will meet and discuss the following:**

      i. Storm location, size, category, predictions and possible storm surge.

      ii. Estimated Storm arrival Time

      iii. Employee and employee's family readiness

      iv. Implementation of the hurricane crew

      v. Readiness of emergency communication channels between plant, Calpine Corp. and Steam host with Calpine Gas Control, CES, and local authorities.

      vi. Surrounding area evacuation

      vii. Evaluate the possibility of a plant shutdown and evacuation.

      viii. Note: If total evacuation is called for, the on shift personnel will be the designated "Hurricane Duty Crew".

   b. **Once PHASE IV is formally implemented take the following steps:**

      i. Plant Management will notify the Hurricane Duty crew to make final preparations at home and for their families and report back to the plant as specified by management.

      ii. Plant Management will begin the transfer of predetermined files.

      iii. Plant Management will ensure that all computer files are backed up.

      iv. All site personnel will ensure that all computers and DPU'S are protected from water damage.

      v. Operations will contact steam host emergency department and City Fire Department and provide them a list of the employees remaining on site.

      vi. Plant management will discuss the steam and power demand, and availability of water with Steam host.

      vii. Operations will contact Calpine Gas Control and CES and inform them of operations plans and gas needs. Emergency numbers will be exchanged.

viii. Plant Management will develop a final list of all plant personnel and emergency telephone numbers where they may be reached for distribution.

c. The Hurricane Crew upon returning to the plant site will do the following:

i. Report to the control room and log in.

ii. Make a plant walk through to assess the preparations.

iii. Meet with the plant management and be briefed on plans, strength of the storm, possible plant shutdown and evacuation.

iv. Caution: If hurricane force winds are expected to reach 100 MPH, plant management should consider a controlled plant shutdown and evacuation.

v. Relieve the operations and maintenance duty personnel.

vi. Continue to monitor weather updates throughout the storm.

d. If a total evacuation is ordered by the Plant Manager or designee, the on-duty crew will secure BFW, gas at the metering stations, and all equipment that is not needed. If applicable, process sumps should be skimmed, pumped down and be left oil free.

5. **PHASE V: HURRICANE DUTY:** A tropical storm/hurricane is predicted to make landfall in the immediate area within a 12 hour period.

    a. In the absence of plant management, the Hurricane Duty Crew lead operator will assume the responsibilities of the plant.

    b. Operations will make a walk through of the plant to insure its readiness for storm conditions, if it is safe to go outside.

    c. Operations will maintain contact with steam host.

    d. The lead operator will ensure the safety of his crew.

    e. The lead operator will maintain his crew inside the control room and not allow any venturing outside during the high winds.

    f. No one person shall venture out into the plant alone, tag teams of two may go out in an emergency or extreme circumstance with permission from Plant Management or the lead operator.

    g. If evacuation becomes necessary, the lead operator, in the absence of plant management, will implement the safe shutdown of the plant and plans for the safe evacuation of his crew.

    h. If evacuation becomes necessary, the lead operator will notify Steam host / City Fire Department of the plans for evacuation.

6. **PHASE VI: POST HURRICANE**: Perform damage assessment and verify status of the plant. The time following the passage of a hurricane until the Plant Manager or designee issues the all clear.

    a. As the storm passage allows, the Hurricane Duty crewmembers will;

        i. Tour the plant to assess the damage incurred. Pictures should be taken of damage.

        ii. Contact Plant Management with crew status and initial damage assessment information.

7. As soon as possible, each employee should contact the plant. A contact number should be given to the lead operator. Each employee should inform the lead operator as to his or her availability to report to work.

8. If the Plant Manager or designee calls for a total plant evacuation, a designated crew will be available after the hurricane has passed and it is safe to re-enter the area to bring the plant back up to starting readiness. Management will exchange emergency numbers with the designated crew so contact can be made throughout the storm's progress.

9. **Caution: All individuals that are on the job site or entering the job site after a storm passes must take extreme caution due to the possibility of unseen damages or other unknown conditions such as rising water, swift currents, electric shock, polluted drinking water, broken glass, and debris hanging ready to fall.**

10. Recordkeeping:

    a. Operations team should be sure to take notes utilizing J5 Logbook or rely on hand written notes if J5 Logbook is not available. When J5 becomes available notes can be added uploaded together once.

    b. Keep all notes and information related to the event per Calpine policy.

7. Attachments:

Appendix 1. Hurricane Supply List
Appendix 2. Hurricane Food List
Appendix 3. Vendor PO List
Appendix 4. Hurricane Preparation List
Appendix 5. Storm Crew
Appendix 6. Hurricane Recovery Checklist
Appendix 7. Plant Contact List
Appendix 8. Chemical Order List

Hurricane
Procedure Appendix

CALPINE

HURRICANE PLAN

BUSINESS CONTINUITY

Document Owner: Business Continuity
Revision schedule: Annual and after activation

Version History

ID	Change	Date	Author
.04		6/27/2011	Kent Williams, Roswitha Firth
Draft	Broadened scope, changed criteria	May 2012	Roswitha Firth
1.0	DF changes incorporated	June 2012	Roswitha Firth
1.1	Annual update: minor clean-up edits, timeline updated	May 2013	Donna Hall
1.2	Incorporated KPMG edits, other minor updates, and bridge call numbers	September 2013	Donna Hall
1.3	Removed Allie Moreno's name, included definitions of the four Wave Responder levels	April 23, 2014	Donna Hall
1.4	Removed Donna Hall's name, replaced DF with HBB	June 2014	Roswitha Firth
1.5	Replaced RF with HH	January 2015	Roswitha Firth

http://departments.one.calpine.com/Corporate/HumanResources/PoliciesProceduresandForm/default.aspx

Table of Contents

Purpose

The purpose of this document is to ensure that Calpine management has the information necessary to make informed decisions regarding the safety of all Calpine employees and contractors before, during, and after a hurricane. The Hurricane Plan also provides an incident management framework that ensures Calpine's critical business processes continue to function regardless of location impact. Upon alert level activation, all or specific Business Resumption Plans (BRPs) may be activated and managed by members of the BCMT.

Audience

This document provides information regarding plan activation and response for the following groups:

- Business Continuity Steering Committee (BCSC)
- Business Continuity Management Team (BCMT)
- Wave Responders
- General employees

Awareness and educational materials for employees and contractors are on OneCalpine.

Scope

This document covers guidelines for Calpine's **response**, i.e., what we should do when the emergency occurs. These are actions that we should be ready to take, and should take, beginning as soon as we are aware of the emergency conditions for which we have planned.

- Decision-making requirements for the BCSC and BCMT
- Responsibilities of the BCSC and BCMT
- Guidance for Wave Responders and all other employees
- Steps to Return to Normal Operations (RTNO) specific to a hurricane

Assumptions

A sufficient number of Wave Responders are available to respond. Wave Responders may be deployed on a rationalized basis, depending on the above criteria, if not others. Certain business functions and associated Wave Responders may be deployed on a discrete basis and at an alternate physical or virtual location, as circumstances permit and Calpine infrastructure (e.g., mobile devices and laptops) can accommodate.

Wave Responder Levels

There are four Wave Responder levels:

- 1a – IS and the Facilities Preparation Crews are deployed to make final preparations at the alternate site(s)
- 1b – Real-time Operations is deployed to begin the shift schedule
- 2 – The Executives, BC Support Team, and Wave Responders initiate operations from the alternate site(s)
- 3 – These Wave Responders backup the Wave 2 Responders on a work rotation basis

Exclusions

- This plan is a component of Calpine's Business Continuity Program. It does not address the recovery, resumption, or restoration of departmental business operations. These procedures are documented in the (BRPs)
- General Business Continuity Program roles and responsibilities are defined in the Business Continuity (BC) Policy and are not repeated here