

D Emergency Classification System

This section of the Plan describes the emergency classification system utilized to categorize an event occurring at the Station into one of four emergency classification levels.

D.1 Event Classifications

The spectrum of possible emergency events at the Station is categorized into the following four (4) emergency classifications, based on the recommendations of NUMARC/NESP-007, Methodology for Development of Emergency Action Levels, January, 1992, Rev. 2 and NEI-99-01 Rev. 5:

- Unusual Event
- Alert
- Site Area Emergency
- General Emergency

The technique for evaluation and classification of emergencies at the Station, based on specific observable data or Control Room instrumentation, is delineated in *Emergency Response Procedures for 0ERP01-ZV-IN01, Emergency Classification. Review and approval of this procedure shall be controlled in accordance with 10 CFR 50.54(q).*

The severity of the emergency classification increases in the order they are listed above from an Unusual Event to a General Emergency. Since the severity of the emergency may change with time, an emergency may be upgraded from one classification level to another. Incidents will typically be classified in a lower emergency classification at first and then escalated to a higher classification if the situation deteriorates. Each of the four emergency classifications has characteristic Emergency Action Levels for various parameters. These levels consist of specific values of various Station parameters such as instrument indications and system status that are used to classify the emergency and to initiate notification and activation of the appropriate members of the Station Emergency Response Organization. After the initial declaration of an emergency classification, the individual serving the lead function (i.e., Emergency Director) will perform a continuing assessment of the situation to determine whether the emergency classification must be upgraded.

The rationale for the Unusual Event and Alert classifications is to provide early and prompt notification of minor events which could lead to more serious consequences given operator error or equipment failure or which might be indicative of more serious conditions which are not yet fully realized. ~~It should be noted that most of the listed initiating conditions for the Unusual Event classification are events that can be expected to be terminated quickly, and therefore, the notification process may occur after the event has been corrected.~~ The Site Area Emergency classification reflects conditions where some significant releases are likely or are occurring, but where major core damage is not indicated based on current information. The General Emergency

classification involves actual or imminent substantial core degradation or melting with the potential for loss of containment integrity.

The philosophy taken for classification will always be to immediately declare the highest classification for which a set of limits have been attained (Emergency Action Levels). For example, a Site Area Emergency would be declared directly if the Emergency Action Level of that classification had been attained, even if the lower, Alert classification had not been previously declared. In utilizing the Emergency Action Level criteria as the basis for initiating emergency response activity, there may be instances when the Station Operations staff cannot determine quickly which of two action levels is appropriate for a particular occurrence. In those cases, the occurrence is treated as the higher level of classification and the appropriate response for that level is initiated.

D.2 Safety Features

The Units are designed with structures, systems, and components to prevent or mitigate the consequences of postulated events that may result in the release of radioactive material into the environment that could produce doses in excess of established values. The Units are also designed with process, radiation monitoring, and analytical instrumentation to measure radioactivity in the Units system fluids, building atmospheres, and liquid and gaseous effluents. These structures, systems, and components are also described in the Final Safety Analysis Report(s).

The initiating conditions and events that determine the emergency classification are based on the actual or potential failure, malfunction, or improper operation of these structures, systems, and components. Some of the initiating conditions and events are directly identifiable by their existence, such as operation of a safety system or a fire, while others require observation of process and radiation monitoring instrumentation and/or radiochemical analysis.

Emergency Response Procedures ~~for~~ 0ERP01-ZV-IN01, Emergency Classification, and Tables D-1 and D-2 provide initiating conditions that lead to Emergency Action Levels and associated emergency classification. Emergency Response Procedures ~~for~~ 0ERP01-ZV-IN01, Emergency Classification, contains process parameter instrumentation and corresponding values, equipment status, and non-process conditions and events for identifying the initiating conditions and events that constitute the Emergency Action Level for each classification. The initiating conditions found under the various classifications are intended as general guidelines and represent the types of conditions that may be evaluated to confirm or modify, at any time, the emergency classification and action level response initiated by the Operations staff. The actual situation, however, from Unusual Event to General Emergency, involves many variables in going from plant instrumentation readouts of a pre-accident situation to significant radiological exposures to the public. Such readings may usefully serve as conservative criteria for determining when to mobilize various emergency organizations, but final decisions to notify and alert the public utilizing the Prompt Notification System are the decisions of the local and State governmental officials.

Station process emergency conditions and events are confirmed and mitigated by use of Emergency Operating Procedures. These procedures are based on guidelines developed by the Westinghouse and General Electric Owners Groups and require the monitoring of critical safety functions and a diagnostic evaluation to classify the emergency.

Non-process emergency conditions and events are confirmed as required by the use of specific Station procedures or physical confirmation.

Station procedures contain the specific instrumentation, equipment status, and non-process conditions and events that are used to establish the emergency classification.

D.3 Emergency Classifications

The following subsections describe each emergency classification. The descriptions contained in these subsections are not intended to be totally descriptive nor all-inclusive. The Emergency Director will declare an appropriate emergency classification when, in his judgment, the Station status warrants.

D.3.1 Unusual Event Classification

Unusual Event is the least severe of the four classes of emergency, in that events are in process or have occurred which indicate a potential degradation of the level of safety of the station or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

This classification includes those situations which, unless complicated by other factors, pose no harm to the public but for which it is prudent to notify Station personnel, State, local, and Federal officials to provide them with current information on unusual events which are occurring or have occurred at the Station

Events in this classification will initiate activation of the Emergency Notification and Response System (ENRS) to notify Emergency Response Organization (ERO) Personnel. This is an information only notification and does not require activation of Emergency Facilities.

D.3.2 Alert Classification

The Alert classification includes events that are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the station or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the Environmental Protection Agency (EPA) Protective Action Guideline exposure levels. This emergency classification includes those situations for which it is prudent to notify Station personnel, and State, Local, and Federal officials in order to assure that emergency personnel are available to respond should the situation become more serious. These situations, unless upgraded to a more severe emergency classification, pose no threat to the public but confirmatory

radiological monitoring by the State may be appropriate in order to verify that no harm to the public has occurred.

Events in this classification will initiate activation of the Technical Support Center and Operations Support Center. The Emergency Operations Facility and the Joint Information Center shall be staffed as a precautionary action and may be activated at the discretion of the Emergency Director. The personnel in the Emergency Operations Facility act in a support function to the Technical Support Center. The Emergency Operations Facility Dose Projection capability is activated at an Alert. Any Emergency Response Facility may be activated at the discretion of the Emergency Director.

D.3.3 Site Area Emergency Classification

The Site Area Emergency classification includes events that are in process or have occurred which involve an actual or likely major failures of station functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed Environmental Protection Agency (EPA) Protective Action Guideline exposure levels beyond the site boundary. This emergency classification includes those situations for which it is prudent to notify Station personnel, State, County, and Federal officials to allow emergency response facilities to be staffed and personnel required for evacuation of near site areas to prepare and stage should the situation become more serious.

Situations classified under the Site Area Emergency classification are those for which it may be prudent to provide early warning to the general public within the ten (10) mile Emergency Planning Zone to provide an increased state of readiness should the situation become more serious.

Although Protective Action Recommendation are not required, declaration of a Site Area Emergency will require initiation of emergency response actions by the Station personnel and the State and County authorities.

D.3.4 General Emergency Classification

The General Emergency is the most severe emergency classification defined in this Plan. The General Emergency classification includes events that are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed Environmental Protection Agency (EPA) Protective Action Guideline exposure levels offsite for more than the immediate site area. This emergency classification includes those situations for which it is prudent to notify Station personnel, State, County, and Federal officials to allow the cognizant organizations to take predetermined protective actions, such as shelter or evacuation of the public, in order to minimize the potential for radiological exposure of the public. For these situations, it is prudent to provide early warning to the population within the

ten (10) mile Emergency Planning Zone to allow the public to take any necessary protective actions.

**Table D-1 (Units 1 and 2)
Initiating Conditions For Emergency Classification
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NOTE				
<i>The following GENERALIZED initiating conditions describe entry into the four emergency classifications for each category. Refer to Emergency Plan Implementing Procedures for, Emergency Classification for the SPECIFIC initiating conditions, plant parameter values and Emergency Action Levels.</i>				
CATEGORIES	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<i>Fission product barriers</i>	<p><i>Any loss or any potential loss of containment</i></p> <p>-----</p> <p style="text-align: center;"><i>Fuel clad degradation</i></p> <p>-----</p> <p><i>Reactor coolant system leakage</i></p>	<i>Any loss or any potential loss of clad or reactor coolant system</i>	<i>Loss of both fuel clad and reactor coolant system or potential loss of both fuel clad and reactor coolant system or Potential loss of either fuel clad or reactor coolant system and loss of any additional barrier</i>	<i>Loss of any two barriers and potential loss or loss of third barrier</i>
<i>Electrical</i>	<p><i>Unplanned loss of class 1E direct current power during cold shutdown or refueling</i></p> <p>-----</p> <p><i>Loss of offsite power to engineered safety feature busses</i></p>	<p><i>AC power to 3 engineered safety feature busses is reduced to a single power source such that any single failure would result in loss of all AC power</i></p> <p>-----</p> <p><i>Loss of offsite and onsite power to all 3 engineered safety feature busses during cold shutdown or refueling</i></p>	<p><i>Loss of all class 1E direct current power</i></p> <p>-----</p> <p><i>Loss of offsite and onsite power to all 3 engineered safety feature busses</i></p>	<i>Prolonged loss of offsite and onsite power to all 3 engineered safety feature busses</i>

**Table D-1 (Units 1 and 2)
Initiating Conditions for Emergency Classification
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CATEGORIES	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<i>Reactor protection / Technical Specification</i>	<i>Inability to reach required shutdown within required Technical Specification limits</i>	<i>Failure of reactor protection system to complete or initiate an automatic reactor trip and manual trip was successful</i>	<i>Failure of reactor protection system to complete or initiate an automatic reactor trip and manual trip was not successful</i>	<i>Failure of the reactor protection system to complete an automatic reactor trip and manual trip was not successful and indication of extreme challenge to ability to cool the core</i>
<i>Communications / Alarms Assessment</i>	<i>Unplanned loss of all onsite or offsite communications capabilities</i> ----- <i>Unplanned loss of most control room safety system annunciation or indication</i>	<i>Unplanned loss of most Control Room safety system annunciation or indication with either (1) a significant transient in progress, or (2) compensatory indicators are unavailable</i>	<i>Inability to monitor a significant transient in progress</i>	
<i>Shutdown Maintenance</i>	<i>Unplanned loss of class 1E direct current power during cold shutdown or refueling</i>	<i>Inability to maintain plant in cold shutdown</i> ----- <i>Loss of offsite and onsite power to all 3 engineered safety feature busses during cold shutdown or refueling</i>	<i>Complete loss of any function needed to achieve or maintain hot shutdown</i> ----- <i>Loss of water level in the reactor vessel that has or will uncover fuel in the reactor vessel</i>	

**Table D-1 (Units 1 and 2)
Initiating Conditions for Emergency Classification
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CATEGORIES	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<i>Radiological release</i>	<i>Unplanned release above limits for 60 minutes</i>	<i>Unplanned release significantly above limits</i>	<i>Radiological release which may approach environmental protection agency protective action guidelines</i>	<i>Radiological release which would result in doses at or above environmental protection agency protective action guidelines</i>
<i>Radiation levels</i>	<i>Unexpected increase in plant radiation levels or airborne concentrations</i>	<p><i>Release of radioactive material or increase in radiation levels that impedes operation of systems required to maintain safe operation or to establish or maintain cold shutdown</i></p> <p>-----</p> <p><i>Major damage to irradiated fuel or loss of water level that has or will result in uncovering of irradiated fuel outside of the reactor vessel</i></p>	<i>Unexpected increases in containment radiation levels (100 rem/hour)</i>	<i>Unexpected increase in containment radiation levels (1000 rem/hour)</i>
<i>Fire/explosion</i>	<i>Fire or explosion in the protected area or switchyard which affects normal operation</i>	<i>Fire or explosion in a vital area potentially affecting safe shutdown or decay heat removal</i>		

**Table D-1 (Units 1 and 2)
Initiating Conditions for Emergency Classification
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CATEGORIES	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Security	Confirmed security event which indicates a potential degradation in the level of safety of the plant	Security event in the protected area ----- Notification of an airborne attack threat ----- Notification of hostile action within the owner controlled area	Security event in the Vital Area ----- Site attack	Security event resulting in loss of physical control of the facility
Toxic /Flammable gas	Toxic/Flammable gases affecting plant operation	Toxic /Flammable gases potentially affecting safe operation		
Natural or destructive phenomena affecting plant vital area	Natural or destructive phenomena affecting plant operations	Natural or destructive phenomena potentially affecting safe plant operation		
Control Room evacuation		Control Room evacuation	Control Room evacuation	Control Room evacuation and plant control cannot be established
Miscellaneous events	Miscellaneous events affecting plant operations	Miscellaneous events potentially affecting safe plant operations	Miscellaneous events affect the ability to shutdown the plant or maintain it in a safe shutdown condition	Miscellaneous events which may potentially result in a hazard to the public

**Table D-2 (Units 3 and 4)
Initiating Conditions for Emergency Classification
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NOTE

The following GENERALIZED initiating conditions describe entry into the four emergency classifications for each category. Refer to Emergency Plan Implementing Procedures for Emergency Classification for the SPECIFIC initiating conditions, plant parameter values and Emergency Action Levels.

Recognition Category C - Cold Shutdown/Refueling System Malfunctions (cont.)

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
CU1 - RCS leakage.	CA1 - Loss of RCS/RPV inventory with irradiated fuel in the RPV.	CS1 - Loss of RPV inventory affecting core decay heat removal capability.	CG1 - Loss of RPV inventory affecting fuel clad integrity with containment challenged with irradiated fuel in the RPV.
CU2 - Unplanned loss of RCS inventory with irradiated fuel in the RPV.			
CU3 - Loss of all off-site AC Power to emergency busses for greater than 15 minutes.	CA3 - Loss of all off-site and all on-site AC power to emergency busses.		
CU4 - Unplanned loss of decay heat removal capability with irradiated fuel in the RPV.	CA4 - Inability to maintain plant in cold shutdown with irradiated fuel in the RPV.		
CU6 - Unplanned loss of all on-site or off-site communications capabilities.			
CU7 - Unplanned loss of required DC power for greater than 15 minutes.			
CU8 - Inadvertent criticality.			

**Table D-2 (Units 3 and 4)
Initiating Conditions for Emergency Classification
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Recognition Category F - Fission Product Barriers

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
FU1- Any loss or any potential loss of containment.	FA1- Any loss or any potential loss of either fuel clad or RCS.	FS1- Loss or potential loss of any two barriers.	FG1- Loss of any two barriers and loss or potential loss of third barrier.

Recognition Category H - Hazards and Other Conditions Affecting Plant Safety

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
HU1- Natural or destructive phenomena affecting the Protected Area.	HA1- Natural or destructive phenomena affecting a plant Vital Area.		
HU2- Fire within Protected Area boundary not extinguished in less than 15 minutes of detection or explosion within the Protected Area Boundary.	HA2- Fire or explosion affecting the operability of plant safety systems required to establish or maintain safe shutdown.		
HU3- Release of toxic, corrosive, asphyxiant, or flammable gases deemed detrimental to normal plant operations.	HA3- Access to a Vital Area is prohibited due to release of toxic, corrosive, asphyxiant or flammable gases which jeopardizes operation of systems required to maintain safe operations or safely shutdown the reactor.		
HU4- Confirmed security condition or threat which indicates a potential degradation in the level of safety of the plant.	HA4- Hostile action within the Owner Controlled Area or airborne attack threat.	HS4- Hostile action within the Protected Area.	HG1- Hostile action resulting in loss of physical control of the facility.

**Table D-2 (Units 3 and 4)
Initiating Conditions for Emergency Classification
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Recognition Category H - Hazards and Other Conditions Affecting Plant Safety (Continued)

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
HU5- Other conditions existing which in the judgment of the Emergency Director warrant declaration of a NOUE.	HA6- Other conditions existing which in the judgment of the Emergency Director warrant declaration of an Alert.	HS3- Other conditions existing which in the judgment of the Emergency Director warrant declaration of Site Area Emergency.	HG2- Other conditions existing which in the judgment of the Emergency Director warrant declaration of General Emergency.
	HA5- Control Room Evacuation Has Been Initiated.	HS2- Control Room Evacuation Has Been Initiated and Plant Control Cannot Be Established.	

Recognition Category R - Abnormal Radiation Levels/Radiological Effluents

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
RU1 - Any unplanned release of gaseous or liquid radio-activity to the environment that exceeds two times the radiological effluent Technical Specifications/ODCM for 60 minutes or longer.	RA1 - Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds 200 times the Radiological Effluent Technical Specifications/ODCM for 15 minutes or longer.	RS1 - Off-site dose resulting from an actual or imminent release of gaseous radioactivity exceeds 100 mrem TEDE or 500 mrem thyroid CDE for the actual or projected duration of the release.	RG1 - Off-site dose resulting from an actual or imminent release of gaseous radioactivity exceeds 1000 mrem TEDE or 5000 mrem Thyroid CDE for the actual or projected duration of the release using actual meteorology.
RU2 - Unexpected rise in plant radiation.	RA3 - Release of radioactive material or rise in radiation levels within the facility that impedes operation of systems required to maintain safe operations or to establish or maintain cold shutdown.		
	RA2 - Damage to irradiated fuel or loss of water level that has resulted or will result in the uncovering of irradiated fuel outside the reactor vessel.		

**Table D-2 (Units 3 and 4) Initiating Conditions for Emergency Classification
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Recognition Category S - System Malfunctions

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
SU1- Loss of all off-site AC Power to emergency busses for greater than 15 minutes.	SA5- AC power capability to emergency busses reduced to a single power source for greater than 15 minutes such that any additional single failure would result in station blackout.	SS1- Loss of all off-site and all on-site AC power to emergency busses.	SG1- Prolonged loss of all off-site I on-site AC power to emergency busses.
SU2- Inability to reach required shutdown within Technical Specification limits.	SA2- Automatic scram fails to shutdown the reactor and the manual actions taken from the Reactor Control Console are successful in shutting down the reactor.	SS2- Automatic scram fails to shutdown the Reactor and manual actions taken From the Reactor Control Console are not successful in shutting down the Reactor.	SG2- Automatic scram and all manual actions fail to shutdown the Reactor and indication of an extreme challenge to the ability to cool the core exists.
	SA4- Unplanned loss of indicating, monitoring and control functions.	SS6- Inability to monitor a significant transient in progress.	
SU4- Fuel clad degradation.		SS3- Loss of all vital DC Power.	
SU5- RCS Leakage.			
SU6- Unplanned loss of all on-site or off-site communications capabilities.			
SU8- Inadvertent Criticality.			