DUKE POWER COMPANY CRISIS MANAGEMENT IMPLEMENTING PROCEDURES

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March 6, 1990

CRISIS MANAGEMENT IMPLEMENTING PROCEDURE

CMIP-10

Classification of Emergency for Catawba Nuclear Station

> Rev. 3 March 6, 1990

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CMIP-10 CLASSIFICATION OF EMERGENCY FOR CATAWBA NUCLEAR STATION

- 1.0 SYMPTOMS
 - 1.1 Notification of Unusual Event
 - 1.1.1 Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant.
 - 1.1.2 No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety occurs.
 - 1.2 Alert
 - 1.2.1 Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant.
 - 1.2.2 Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.
 - 1.3 Site Area Emergency
 - 1.3.1 Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public.
 - 1.3.2 Any releases are not expected to exceed EPA Protective Action Guideline exposure levels except near the site boundary.
 - 1.4 General Emergency
 - 1.4.1 Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity.
 - 1.4.2 Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

2.0 IMMEDIATE ACTIONS

2.1 Compare actual plant conditions to the Emergency Action Level(s) listed in Enclosure 4.1 then declare the appropriate Emergency Class as indicated.

If a change in the emergency class is made, perform steps 2.2, 2.3, and 2.4 below.

- 2.2 Instruct the State/County Communicator to notify the state(s) and counties per CMIP-13 of any change in the emergency class. If the emergency class is SITE AREA EMERGENCY or GENERAL EMERGENCY, determine protective action recommendations per CMIP-1 and transmit these recommendations.
 - NOTE: Notifications to the state(s) and counties must be made within 15 minutes whenever there is a change in the emergency classification.
- 2.3 Announce the change in the emergency class to all CMC personnel and to the Emergency Coordinator at the TSC.

3.0 SUBSEQUENT ACTIONS

3.1 To escalate, de-escalate or close out the Emergency, compare plant conditions to the Emergency Action Levels of Enclosure 4.1. Any decision to de-escalate from a General Emergency condition must be discussed with the senior NRC and State representatives.

Notify state(s), counties, and NRC by verbal summary of any reduction or termination in the emergency class followed by a written summary within eight (8) hours.

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4.0 ENCLOSURES

4.1 Emergency Event List for Emergency Classes

Event No.

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EVENT & 4.1.1 PRIMARY COOLANT LEAK

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NOTIFICATION OF UNUSUAL EVENT	ALERT	SITE AREA PMERGENCY	GENERAL ENERGENCY
NC System leakage greater than Tech Spec limits in Modes 1-4.	1. NC System leakage 1 greater than 50 gpm in Modes 1-4.	. NC System leakage greater than available ECCS capacity.	1. Any LOCA with failure of ECCS.
o Greater than 1 gpm unidentified NC System leakage in Modes 1-4	o NC System leakage greater than 50 gpm in Modes 1-4	o S/I actuated or required	o LOCA with failure of both trains of ECCS injection
AND		AND	AND
Load reduction or plant cooldown initiated in accordance with Tech Spec 3.4.6.2.	NC System subcooling greater than 0°F	Existing NV, NI and ND flow <u>cannot</u> maintain NC System subcooling greater than 0°F.	NC System subcooling <u>cannot</u> be maintained greater than 0°F.
o Greater than 10 gpm identified NC System	Leak <u>cannot</u> be isolated within 15 minutes.	(Continued)	o LOCA with failure of both trains of ECCS recirculation capabilit
leakage in Modes 1-4			AND
AND Load reduction or plant cooldown initiated in accordance with Tech	 S/G tube leak with loss of offsite power. o S/G tube leak greater 		NC System subcooling <u>cannot</u> be maintained greater than 0°F.
Spec 3.4.6.2.	than 10 gpm		
	AND		o LOCA
o Greater than 500 gpd primary to secondary leakage in any S/G in Modes 1-4	NC System subcooling greater than 0°F AND		AND Plant conditions requirentry into EP/1(2)/A/5000/2B1,
AND Load reduction or plant	Both A <u>and</u> B main bus lines de-energized.		Inadequate Core Cooling
cooldown initiated in accordance with Tech Spec 3.4.6.2.			(Continued)
	(Continued)		
(Continued)			

CATAMBA NUCLEAN STATION EMERGENCY ACTION LEVELS

EVENT | 4.1.1 PRIMARY COOLANT LEAR (continued)

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NOTIFICATION OF GENERAL ENERGENCY SITE AREA EMERGENCY ALERT UNUSUAL EVENT 2. LOCA with initially 2. S/G tube leak greater 1. S/G tube leak with an o Greater than 1 gpm successful ECCS followed than 50 gpm with a unisolable steam line total primary to by failure of ECCS heat steam line break. break outside secondary leakage in sink and failure of Containment. all S/Gs in Modes 1-4 Containment heat removal. o S/G tube leak greater AND than 50 gpm o Known S/G tube leak o LOCA greater than 10 gpm Load reduction or plant AND cooldown initiated in AND AND accordance with Tech Steam line break Spec 3.4.6.2. Loss of recirculation inside Containment Unisolable steam line heat sink on the ruptured S/G break outside Containment AND AND o Any NC System pressure boundary leakage in AND Loss of Containment Valid indication on Modes 1-4 spray heat sink. EMF-53A or 53B NC System subcooling reading greater than greater than 0°F. AND

END

Load reduction or plant cooldown initiated in accordance with Tech Spec 3.4.6.2.

o Greater than 40 gpm controlled NC system leakage at 2235 psig in Modes 1-4

AND

Load reduction or plant cooldown initiated in accordance with Tech Spec 3.4.6.2.

(Continued)

o Unisolable steam line break outside Containment

AND

Field monitoring teams detect activity at the Protected Area fense at greater than or equal to 2 mr/hr whole body.

END

or equal to 290 R/hr.

o S/G tube leak greater than 50 gpm

AND

Unisolable steam line break outside Containment on the ruptured S/G.

END

CATAMBA NUCLEAR STATION PARTGRACY ACTION LEVELS EVENT | 4.1.1 PRIMARY COOLANT LEAN (continued)

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o Greater than 1 gpm leakage from any NC pressure isolation valve at 2235 psig in Modes 1-4

AND

Load reduction or plant cooldown initiated in accordance with Tech Spec 3.4.6.2.

Unisolable NC System
 leakage greater than
 gpm in Rodes 5 and 6.

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 Failure of an unisolable PZR PORV or a PZR safety valve to close following a reduction of NC System pressure.

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CATAWBA NUCLEAR STATION EMERGENCY ACTION LEVELS

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EVENT \$ 4.1.2 FUEL DAMAGE

NOTIFICATION OF UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL ENERGENCY
 NC System activity greater 1. than Tech Spec limits in Rodes 1-5. 	Severe loss of fuel 1. cladding.	Degraded core with possible loss of coolable geometry.	Loss of 2 of 3 fission product barriers with potential for loss of the 3rd barrier. The
o Greater than 1.0 microCurie per gram dose equivalent I-131 for more than 48 continuous hours	o Valid indication on any Reactor Building EMF reading greater than or equal to 1000 times background value.	o Plant conditions require entry into EP/1(2)/A/5000/282, Degraded Core Cooling.	3 barriers are the fuel cladding, NC System and Containment.
per Chemistry analysis in Modes 1–5	value.		NOTE: To classify at this level, you
AND Load reduction or plant	o Valid indication on EMF-48 reading greater	o Containment hydrogen concentration greater than or equal to 1.0%	must satisfy at least one condition from 2 of the 3 categories listed
cooldown initiated in accordance with Tech Spec 3.4.8.	than or equal to 1000 times background value.	AND Hydrogen concentration	(A, B, C) and have the potential for satisfying at least
o Dose equivalent I-131 in excess of Tech Spec Figure 3.4-1 per	o Chemistry analysis indicates that primary coolant dose equivalent I-131 concentration is	increasing at a rate of greater than or equal to 0.1% per hour.	one condition from the remaining category.
Chemistry analysis in Modes 1-5	greater than or equal to 300 microCuries per ml.	o Valid indication on EMF-53A or 53B reading greater than or equal	A. Loss of fuel cladding barrier.
AND Load reduction or plant cooldown initiated in	o Chemistry analysis indicates greater than or equal to	to 290 R/hr.	o Chemistry analysis indicates greater than or equal to 20% total
accordance with Tech Spec 3.4.8.	5% total fuel clad failures.	END	fuel clad failure.
(Continued)	o Chemistry analysis indicates an increase		o Valid indication on EMF-53A or 53B reading greater than or equal to 1100 B/hr.
	of greater than 1% fuel failures within 30 minutes.		
			(Continued)

END

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CATAMBA NUCLEAR STATION EMERGENCY ACTION LEVELS

EVENT # 4.1.2 FUEL DAMAGE (continued)

NOTIFICATION OF

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

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o Specific activity_ greater than 100/E microCuries per gram per Chemistry analysis in Modes 1-5

AND

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Load reduction or plant cooldown initiated in accordance with Tech Spec 3.4.8.

END

o Plant conditions require entry into EP/1(2)/A/5000/2B1, Inadequate Core Cooling.

 B. Loss of NC System barrier.

o NC System leakage greater than 50 gpm.

C. Loss of Containment barrier.

> o Incomplete Containment integrity.

o Known Containment leakage in excess of Tech Specs.

o Containment pressure greater than or equal to 60 psig.

o Containment hydrogen concentration greater than or equal to 9%.

END

CATAWBA NUCLEAR STATION EMERGENCY ACTION LEVELS

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Enclosure 4.1

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EVENT # 4.1.3 STEAM SYSTEM FAILURE

NOTIFICATION OF GENERAL EMERGENCY SITE AREA EMERGENCY ALERT UNUSUAL EVENT N/A Steam line break with a 1. Unisolable steam line 1. 1. Steam line break which S/G tube leak greater break outside results in rapid than 50 gpm. Containment with a depressurization of S/G tube leak. the secondary side. o Steam line break inside Containment o Unisolable steam o Steam line on the ruptured line break outside depressurization S/G Containment resulting in Safety Injection or Main AND AND Steam Isolation. S/G tube leak greater Known S/G tube leak than 50 gpm greater than 10 gpm END AND AND Valid indication on NC System subcooling EMF-53A or 53B greater than 0°F. reading greater than or equal to 290 R/hr. o Unisolable steam line break outside o Unisolable steam line Containment break cutside Containment on the AND ruptured S/G Field monitoring teams AND detect activity at the Protected Area fence S/G tube leak greater at greater than or than 50 gpm. equal to 2 mr/hr whole body.

(Continued)

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END

CATAWBA NUCLEAR STATION EMERGENCY ACTION LEVELS

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EVENT | 4.1.3 STEAM SYSTEM FAILURE (Continued)

NOTIFICATION OF UNUSUAL EVENT	ALERT	SITE AREA ENERGENCY	GENERAL ENERGENCY
	 Steam line break with failure of ECCS or Main Steam Isolation. 		
	o Steam line depressurization resulting in Safety Injection signal		
	AND		
	Failure of both trains of ECCS injection.		
	o Steam line depressurization resulting in Main Steam Isolation signal		
	AND		
	The failure of two or more MSIVs to close results in the depressurization of two or more S/Gs.		
	END		

CATAWBA NUCLEAP STATION PRERGENCY ACT LEVELS

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EVENT & 4.1.4 HIGH RADIATION/RADIOLOGICAL EFFLUENTS

NOTIFICATION OF GENERAL EMERGENCY SITE AREA EMERGENCY ALERT UNUSUAL EVENT tal releases of gases. 1. Acc 1. Accidental releases 1. High radiation levels 1. Gaseous or liquid or high airborne of gases. radiological effluents contamination. exceed Tech Spec limits. o Valid indication on EMF-36L reading greater than or o Valid indication on equal to 7.6 E5 cpm. EMF-36L reading greater o Valid indication on o Gaseous radiological than or equal 3.8 E4 any area EMF reading effluents exceed Tech cpm. (See NOTE) greater than or Spec limits as equal to 1000 times determined by o Valid indication on EMF-36H background value. Radiation Protection reading greater than or calculations. equal to 3.5 E2 cpm. o Valid indication on EMF-37 has increased by greater than or equal o Valid indication on to 2.4 E3 cpm over any EMF-41 reading greater o Valid indication on o Valid indication on EMF-37 1 minute period. Refer than or equal to 1000 EMF-58 reading greater has increased by greater to computer points P0129, times background value. than or equal to 50 than or equal to 4.8 E4 P0130, P0131, P1822. times the TRIP 2 com over any 1 minute (See NOTE) setpoint. period. Refer to computer points P0129, 2. Gaseous or liquid P0130, P0131, P1822. radiological effluents o Dose assessment team exceed 10 times Tech o Valid TRIP 2 alarm on calculations project Spec limits. EMF-49L or EMF-57 a dose rate at the o Dose assessment team Site Boundary of AND calculations or field greater than or equal o Valid indication on monitoring team to 50 mr/hr whole any of the following Failure of the release measurements result in a body or 250 mr/hr effluent monitors path to automatically 2 hour integrated dose thyroid. reading greater than isolate. projection at the Site or equal to 10 times Boundary of greater than the TRIP 2 setpoint: or equal to 1 rem whole body or 5 rem thyroid. o Field monitoring team o EMF-35L o Liquid radiological measurements determine o EMF-36L effluents exceed Tech the dose rate at the o EMF-37. Spec limits as Site Boundary is greater determined by than or equal to Radiation Protection 50 mr/hr whole body calculations. or 250 mr/hr thyroid. (Continued)

END

END

NOTE: This EMF setpoint is calculated based on Stability Class "G" meteorology, and a Unit Vent flowrate of 1.9 E5 cfm. Calculations by the dose assessment team use actual meteorology and Unit Vent flowrate. Therefore, this EMF setpoint should not be used if dose assessment team calculations are available.

CATAWBA NUCLEAR STATION EMERGENCY ACTION LEVELS

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EVENT | 4.1.4 HIGH RADIATION/RADIOLOGICAL EFFLUENTS (continued)

NOTIFICATION OF UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL ENERGENCY
	o Valid indication on EMF-58 reading greater than or equal to 500 times the TRIP 2 setpoint.		
	o Valid indication on EMF-49L or EMF-57 reading greater than or equal to 10 times the TRIP 2 setpoint		
	AND		
	Failure of the release path to automatically isolate.		
	o Radiological effluents exceed 10 times Tech Spec limits as determined by Radiation Protection calculations.		
	END		

CATAWBA NUCLEAR STATION EMERGENCY ACTION LEVELS

EVENT | 4.1.5 LOSS OF SHETDOWN FUNCTIONS

N/A

NOTIFICATION OF GENERAL EMERGENCY ALERT SITE AREA EMERGENCY UNUSUAL EVENT 1. Transient initiated by 1. Complete loss of any 1. Complete .oss of any loss of CF and CN Systems function needed for function needed to followed by failure of Hot Shutdown conditions maintain core cooling heat removal capability in Modes 5 and 6. in Modes 1-4. for an extended period in Modes 1-4. o Failure of heat sink o Failure of heat sink results in the causes loss of Cold e Loss of CM/CF Shutdown conditions inability to feeduater flow in Modes 5 and 6 maintain Hot Shutdown capabilit/ in (Mode 4) Modes 1-4. AND AND AND NC System subcooling cannot be maintained NC System subcooling CA flow cannot be cannot be maintained greater than 0°F. established within greater than 0°F. **30 minutes** AND (Continued) o Inability to feed S/Gs from any source in NC System feed and bleed flow cannot Modes 1-3 be established or AND maintained. NC System subcooling cannot be maintained greater than 0°F. (Continued)

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EVENT | 4.1.5 LOSS OF SHUTDOWN FUNCTIONS (continued)

NOTIFICATION OF UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL ENERGENCY
	2. Transient with failure of the Reactor Protection System to automatically initiate and complete a Rx trip which brings the Reactor subcritical (ATWS).	 2. Transient requiring operation of shutdown systems with failure to trip (power generation continues). o Transient with failure of the Reactor Protection System to automatically initiate and complete a Rx trip which brings the Reactor subcritical (ATWS) <u>AND</u> Control rods cannot be manually tripped or inserted from the Control Room. 	initiate and complete a Rx trip which brings the Reactor subcritical (ATWS)
		(concrined)	(Continued)

CATAWBA NUCLE TATION ENERGENCY ACTION LEVELS

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EVENT | 4.1.5 LOSS OF SHUTDOWN FUNCTIONS (continued)

loss of Reactor Vessel Coolant Inventory in Modes 5 and 6.in Modes 5 and 6.o Failure of heat sink causes loss of Cold Shutdown conditions in Modes 5 and 6o Failure of heat sink causes loss of Cold Shutdown conditions in Modes 5 and 6NIDNIDLower Range RVLIS leve indicates core is uncovered.NICSystem level less than 11% and continues to decrease after initiation of NC System make-up.o Failure of heat sink causes loss of Cold Shutdown conditionso Failure of heat sink causes loss of Cold Shutdown conditionso Failure of heat sink causes loss of Cold Shutdown conditions	NOTIFICATION OF UNUSUAL EVENT	ALERT	SITE AREA ENE	RGENCY	GENERAL EMERGENCY
 o Failure of heat sink causes loss of Cold Shutdown conditions in Modes 5 and 6 MD MD NC System level less than 114 and continues to decrease after initiation of NC System make-up. o Failure of heat sink causes loss of Cold Shutdown conditions in Modes 5 and 6 ADD Lower Range RVLIS leve indicates core is uncovered. o Failure of heat sink causes loss of Cold Shutdown conditions in Modes 5 and 6 MD Core Exit T/Cs indicates superheat at the core exit. Core Exit T/Cs indicates superheat at the core exit. Continued) 			Cold Shutdown loss of React Coolant Inven	with or Vessel tory in	subsequent core uncovery
causes loss of Cold Shutdown conditions in Modes 5 and 6in Modes 5 and 6MDMDLover Range RVLIS leve indicates core is uncovered.NC System level less than 11% and continues to decrease after initiation of NC System make-up.Lover Range RVLIS leve indicates core is uncovered.o Failure of heat sink causes loss of Cold Shutdown conditions in Modes 5 and 6MDO Failure of heat sink causes loss of Cold Shutdown conditions 			o Failure of I	heat sink	causes loss of Cold
NMDLower Range RVLISNC System level less than 11% and continues to decrease after initiation of NC System make-up.Lower Range RVLISO Failure of NC System make-up.O Failure of heat sink causes loss of Cold Shutdown conditions in Modes 5 and 6O Failure of heat sink causes loss of Cold Shutdown conditions in Modes 5 and 6O Failure of heat sink causes loss of Cold Shutdown conditions in Modes 5 and 6NDDNDDCore Exit T/Cs indicates superheat at the core exit.Lower Range RVLIS level decreasing after initiation of NC System make-up.(Continued)			causes loss Shutdown con	of Cold aditions	in Modes 5 and 6
NC System level less than 11% and continues to decrease after initiation of NC System make-up.indicates core is uncovered.O Failure of NC System make-up.O Failure of heat sink 			in Modes 5 /	and 6	AND
than 11% and continues to decrease after initiation of NC System make-up. o Failure of heat sink causes loss of cold Shutdown conditions in Modes 5 and 6 O Failure of heat sink causes loss of cold Shutdown conditions in Modes 5 and 6 O Failure of heat sink causes loss of cold Shutdown conditions in Modes 5 and 6 O Failure of heat sink causes loss of cold Shutdown conditions in Modes 5 and 6 O Failure of heat sink causes loss of cold Shutdown conditions in Modes 5 and 6 O Failure of heat sink causes loss of cold Shutdown conditions in Modes 5 and 6 O Failure of heat sink causes loss of cold Shutdown conditions in Modes 5 and 6 Core Exit T/Cs indicate superheat at the core exit. (Continued)					Lower Range RVLIS level indicates core is
initiation of NC System make-up. o Failure of heat sink causes loss of Cold Shutdown conditions in Modes 5 and 6 <u>AND</u> Lower Range RVLIS level decreasing after initiation of NC System make-up. o Failure of heat sink causes loss of Cold Shutdown conditions in Modes 5 and 6 <u>AND</u> (Continued)			than 11% and	d continues	uncovered.
Causes loss of Cold Shutdown conditions in Modes 5 and 6 AND Core Exit T/Cs indicate superheat at the core exit. Lower Range RVLIS level decreasing after initiation of NC System make-up. Causes loss of Cold Shutdown conditions in Modes 5 and 6 Core Exit T/Cs indicate superheat at the core exit. (Continued)				and the second	
o Failure of heat sink causes loss of Cold Shutdown conditions in Modes 5 and 6 Core Exit T/Cs indicate superheat at the core exit. Lower Range RVLIS level decreasing after initiation of NC System make-up. (Continued)			System make-	-ир.	causes loss of Cold Shutdown conditions
in Modes 5 and 6 Core Exit T/Cs indicate superheat at the core exit. Lower Range RVLIS level decreasing after initiation of (Continued) NC System make-up.			causes loss	of Cold	
Lower Range RVLIS level decreasing after initiation of (Continued) NC System make-up.					Core Exit T/Cs indicate superheat at the core
level decreasing after initiation of (Continued) NC System make-up.			AND		exit.
NC System make-up.					
(Continued)					(Continued)
			(Continue	d)	

CATAWBA NUCLE/ TATION EMERGENCY ACTION LEVELS

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EVENT | 4.1.5 LOSS OF SHUTDOWN FUNCTIONS (continued)

NOTIFICATION OF UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
		o Failure of heat sink	o Failure of heat sink
		causes loss of Cold	causes loss of Cold
		Shutdown conditions	Shutdown conditions
		in Modes 5 and 6	in Modes 5 and 6
		AND	AND
		Reliable NC System	NC System level belo
		level indication	bottom range of
		unavailable	available level indicators
		AND	
			AND
		Core exit T/Cs or	
		AP/1(2)/A/5500/19,	Available NC System
		Loss of ND, Enclosure	make-up flow is less
		3, indicate boiling in core	than applicable value given in
			AP/1(2)/A/5500/19,
		AND	Loss of ND, Enclosure 4
		Available NC System	
		make-up flow is less	AND
		than applicable	
		value given in	Emergency Coordinato
		AP/1(2)/A/5500/19,	judgement that core
		Loss of ND,	uncovery is imminent
		Enclosure 4.	
			END
		END	

CATAWBA NUCLEAL STATION ENERGENCY AC I LEVELS

EVENT & 4.1.6 LOSS OF POWER

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	NOTIFICATION OF UNUSUAL EVENT	ALERT		SITE AREA EMERGENCY		GENERAL ENERGENCY
1.	Loss of offsite power in Modes 1-6. o Both A and B main bus	and loss of all onsite AC power for greater than 1 minute but less than or equal to 15	1.	Loss of offsite power and loss of all onsite AC power for greater than 15 minutes in Modes 1-4.	1.	Loss of offsite power and loss of all onsite AC power with total loss of S/G feed capability in Rodes 1-4.
	lines de-energized in	minutes in Hodes 1-4.				
	Modes 1-6.	o Both 4160V Essential Buses are de-energized		o Both 4160V Essential Buses are de-energized for greater than 15 minutes in Modes 1-4.		o Both 4160V Essential Buses are de-energized in Modes 1-4
2.	Loss of onsite AC power in Modes 1-4.	for greater than 1 minute Lat less than		minutes in Modes 1-4.		AND
	In moles I to	or equal to 15 minutes in Modes 1-4.		10-11-01		Loss of CM/CF feedwater flow capacity
	o Both D/Ss are incapable (for greater than 2			(Continued)		AND
	hours) of powering the 4160V Essential Buses	2. Loss of offsice power				
	in Modes 1-4.	and loss of all onsite				CA Flow cannot be established within
		AC power for greater than 15 minutes in Modes 5 and 6.				30 minutes.
3.	Loss of onsite AC power					
	in Modes 5 and 6.	o Both 4160V Essential Buses are de-energized				END
	o Both D/Gs are incapable (for greater than 8 hours) of powering the 4160V Essential Buses in Modes 5 and 6.	for greater than 15 minutes in Modes 5 and 6.				

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CATAMBA NUCLEAR STATION ENERGENCY ACTION LEVELS

EVERT \$ 4.1.6 LOSS OF POWER

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NCTIFICATION OF UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL ENERGENCY
	 Loss of all vital DC 2 power for greater than 1 minute but less than or equal to 15 minutes in Bodes 1-4. 	 Loss of all vital DC power for greater than 15 minutes in Rodes 1-4. 	
	o Vital DC Buses EDA, EDD, EDE and EDF de-energized for greater than 1 minute but less than or equal to 15 minutes in Modes 1-4.	o Vital DC Buses EDA, EDD, EDE and EDF de-energized for greater than 15 minutes in Modes 1-4.	
	In modes 1-4.	EMD	
	 Loss of all vital DC power for greater than 15 minutes in Modes 5 		

o Vital DC Buses EDA, EDD, EDE and EDF de-energized for greater than 15 minutes in Modes 5 and 6.

END

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CATAWBA NUCLE STATION EMERGENCY ACT. . LEVELS

EVENT | 4.1.7 FIRES AND SECURITY ACTIONS

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	NOTIFICATION OF UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL ENERGENCY
•	Fire within the Plant (see NOTE) that takes more than 10 minutes to extinguish.	1. Fires potentially affecting safety systems needed for current operating mode.	1. Fire compromising the functions of shutdown systems.	1. Any major fire which could cause massive damage to the Unit.
			o Observation of a fire	o Fire requiring
	Security threat.	o Observation of a	that defeats both trains for the single	evacuation of the Control Room
		fire that could	operable train) of	
		adversely affect	safety systems needed	AND
	o Discovery of a bomb within the Site Boundary.	safety systems needed for current	for current operating	
	within the site boundary.	operating mode.	mode.	Control of shutdown systems <u>cannot</u> be established from any
	o Civil disturbance		o Fire requiring	plant location.
	(hostile).	o Fire requiring	evacuation of the	
		evacuation of the	Control Room	
		Control Room		(Continued)
	o Intrusion/attempted	AND	AND	
	intrusion (Protected	AND	Control of shutdown	
	Area).	Control of shutdown	systems cannot be	
		systems has been	established from the	
		established or is	Auxiliary Shutdown	
	o Hostage situation/	in the process of being established	Panels	
	extortion.	from the Auxiliary Shutdown Panels.	AND	
			Control of shutdown	
	a Cognitive threat as		systems has been	
	o Security threat as determined by Shift	(Continued)	established or in the the process of being	
	Supervisor/Emergency	(concluded)	established from the	
	Coordinator and		Standby Shutdown	
	Security.		Facility.	
	END		(Continued)	

NOTE: Plant is defined as Auxiliary Building, Turbine Building, Service Building, Reactor Building, Diesel Generator Rooms, Doghouses, Spent Fuel Building, Standby Shutdown Facility, RN Pumphouse and Monitor Tank Building.

STATION CATAMBA NUCLI EMERGENCY ACT A LEVELS

EVENT & 4.1.7 FIRES AND SECURITY ACTIONS (continued)

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NOTIFICATION OF UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL ERERGENCY
	2. Ongoing security compromise.	2. Imminent loss of physical control of the Plant. (See NOTE 1)	 Loss of physical control of the Plant. (See NOTE 1)
	o Adversaries commandeer an area of the Plant but do not control any vital areas. (See NOTES 1 and 2)	o Physical attack on the Plant (see NOTE 1) which leads to the imminent occupancy of the Control Room and Auxiliary	o Physical attack on the Plant (see NOTE 1) has resulted in occupation of the Control Room and Auxiliary Shutdown Panels.
	o Discovery of a breached barrier caused by intrusion or sabotage in a vital area. (See NOTE 2)	o Discovery of a bomb within a vital area. (See NOTE 2)	
	o Discovery of a bomb within the Protected Area.	<u>Bai</u>	
	o Ongoing security compromise as determined by Emergency Coordinator and Security.		
	END		

NOTE: 1) Plant is defined as Auxiliary Building, Turbine Building, Service Building, Reactor Building, Diesel Generator Rooms, Doghouses, Spent Fuel Building, Standby Shutdown Facility, RM Pumphouse and Monitor Tank Building.

2) For classification purposes, consider the RM Pumphouse as a vital area.

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CATAWBA MUCLE STATION ENERGENCY AC / LEVELS

EVENT | 4.1.8 SPENT FUEL DAMAGE

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UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL ENERGENCY
N/A	 Damage to spent fuel with release of radioactivity. 	 Major damage to spent fuel with release of radioactivity. 	N/A
	CONTAINMENT	CONTAINMENT	
	o Valid TRIP 2 alarm on 1EMF-17 (2EMF-2) (Reactor Bldg Refuel Bridge)	o Valid TRIP 2 alarm on 1EMF-17 (2EMF-2) (Reactor Bldg Refuel Bridge)	
	AND	AND	
	Valid indication on any of the following effluent monitors reading greater than or equal to 10 times the TRIP 2 setpoint:	Valid indication on EMF-36£ reading greater than or equal to 3.8 E4 cpm. (See NOTE)	
	0 EMF-35L 0 EMF-36L 0 EMF-37.	o Valid TRIP 2 alarm on 1ENF-17 (2EMF-2) (Reactor Bldg Refuel Bridge)	
		AME	
	(Continued)	Dose assessment team calculations project a dose rate at the Site Boundary of greater than or equal to 50 mr/hr whole body or 250 mr/hr thyroid.	
		(Centinued)	

NOTE: This EMF setpoint is calculated based on Stability Class "G" meteorology and a Unit Vent flowrate of 1.9 E5 cfm. Calculations by the dose assessment team use actual meteorology and Unit Vent flowrate. Therefore, this EMF setpoint should not be used if dose assessment team calculations are available.

CATAWBA MUCLEAR STATION EMERGENCY ACTION LEVELS

EVENT | 4.1.8 SPENT FUEL D'MAGE (continued)

NOTIFICATION OF UNUSUAL EVENT ALERT SITE AREA EMERGENCY GENERAL ENERGENCY SPENT FUEL POOL SPENT FUEL POOL o Valid TRIP 2 alarm o Valid TRIP 2 alarm on 1EMF-15 (2EMF-4) on 1EMF-15 (2EMF-4) (Spent Fuel Bldg (Spent Fuel Bldg Refuel Bridge) Refuel Bridge) AND AND Valid indication on Valid indication on any of the following EMF-36L reading greater effluent monitors than or equal to 3.8 E4 reading greater than com. (See NOTE) or equal to 10 times the TRIP 2 setpoint: O EMF-35L o Valid TRIP 2 alarm on O EMF-36L 1EMF-15 (2EMF-4) 0 EMF-37. (Spent Fuel Bldg Refuei Bridge) AND END

> Dose assessment team calculations project a dose rate at the Site Boundary of greater than or equal to 50 mr/hr whole body or 250 mr/hr thyroid.

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END

NOTE: This EMF setpoint is calculated based on Stability Class "G" meteorology and a Unit Vent flowrate of 1.9 E5 cfm. Calculations by the dose assessment team use actual meteorology and Unit Vent flowrate. Therefore, this EMF setpoint should not be used if dose assessment team calculations are available.

CATAWBA NUCLEAR STATION EMERGENCY ACTION LEVELS

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EVENT | 4.1.9 NATURAL DISASTERS AND OTHER HAZARDS

	NOTIFICATION OF UNUSUAL EVENT	ALERT		SITE AREA EMERGENCY		GENERAL ENERGENCY
1.	Earthquake felt in plant and detected by seismic monitoring instruments.	1. Earthquake greater than OPE level.	1.	Earthquake greater than SSE level.	1.	Any major internal or external event (e.g. aircraft impact, earthquakes substantially
	o Valid "Peak Shock Annunciator" alarm.	o Valid "OBE EXCEEDED" annunciator alarm (1AD-4, B-8).		o Earthquake intensity greater than 6.15g Horizontal or 0.10g Vertical (SSE level).		could cause massive damage to the Unit.
	o Valid alarm on "Strong Motion Accelerograph."	(Continued)	2.	Low water level.		
2.	Low water level.			o Lake level less than or equal to 557.5 ft		
	o Lake level less than or equal to 557.5 ft			AND		
	AND			SNSWP is not available.		
	SNSWP is available.			(Continued)		
	(Continued)					

CATAWBA NUCLEAR STATION ENERGENCY AC LEVELS

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EVENT | 4.1.9 NATURAL DISASTERS AND OTHER HAZARDS (continued)

	NOTIFICATION OF UNUSUAL EVENT	ALERT		SITE AREA EMERGENCY	GENERAL ENERGENCY
3.	Any tornado/severe 2 weather within the Site Boundary.	Damage from tornado, severe weather, missile explosion, aircraft crash or train derailment causing a	3.	Damage from tornado, severe weather, missile, explosion, aircraft crash, or train derailment causing a loss of any	
	o Tornado/severe weather onsite	loss of any function needed for Cold Shutdown conditions		function needed for Hot Shutdown conditions in	
	AND	in Modes 5 and 6.		Modes 1-4.	
	Physical damage observed to equipment/structures within the Site Boundary needed for plant operation.	o Damage to plant equipment causing the inability to maintain Cold		o Damage to plant equipment results in the inability to establish or maintain Hot Shutdown conditions in Modes 1-4	
۹.	Aircraft crash.	Shutdown conditions in Modes 5 and 6		AND	
		AND		NC System subcooling	
	o Aircraft crash within the Site Boundary.	NC System subcooling <u>cannot</u> be maintained greater than 0°F.		<u>cannot</u> be maintained greater than 0°F.	
				(Continued)	
	(Continued)	(Continued)			

CATAWBA NUCLEAR STATION ENERGENCY ACTION LEVELS

CMIP-10 Enclosure 4.1 Page 22 of 27

EVENT | 4.1.9 NATURAL DISASTERS AND OTHER HAZARDS (continued)

	NOTIFICATION OF UNUSUAL EVENT	ALERT		SITE AREA EMERGENCY	GENERAL ENERGENCY
	Train derailment onsite. 3	. Release of toxic or flammable gas in Modes 5 and 6.	4.	Release of toxic or flammable gas in Modes 1-4.	
	o Train derailment				
	resulting in physica!				
	damage to equipment/	o Entry of an		o Entry of uncontrolled	
	structures within the	uncontrolled toxic		toxic or flammable gas	
	Site Boundary needed	or flammable gas		into any plant area	
	for plant operation.	into any plant area		which prevents the	
		which prevents the operation of		operation of systems needed to establish	
		systems needed		or maintain Hot	
2	Explosion within the Site	to maintain Cold		Shutdown conditions	
0	Boundary.	Shutdown conditions		in Modes 1-4	
		in Modes 5 and 6			
				AND	
	o Explosion within the Site	AND			
	Boundary resulting in			NC system subcooling	
	physical damage to	NC System subcooling		cannot be maintained	
	equipment/structures	cannot be maintained		greater than 0°F.	
	needed for plant operation or injuries to personnel.	greater than 0°F.			
	or injuries to personner.				
				END	
		END			
•	Release of toxic or				
	flammable gases.				
	o Release of toxic or				
	flammable gas resulting				
	in personnel injury or				
	evacuation within the				
	Destasted tree				

END

Protected Area.

CATAWBA NUCI "AR STATION EMERGENCY / ON LEVELS

EVENT \$ 4.1.10 OTHER ABNORMAL PLANT CONDITIONS

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	NOTIFICATION OF UNUSUAL EVENT	ALERT		SITE AREA ENERGENCY		GENERAL ENERGENCY
1.	BCCS initiated.	1. Evacuation of Contr Room.	ol 1.	Evacuation of Control Room.	1.	Evacuation of Control Room.
	o Valid S/I signal verified by redundant indications	o Evacuation of the Control Room requ		o Evacuation of the Control Room required		o Evacuation of the Control Room required
	AND	AND		AND		MD
	ECCS injection into the vessel has occurred.	Control of shutdo systems has been established or is in the process of being established		Control of shutdown systems <u>cannot</u> be established from the Auxiliary Shutdown Panels		Control of shutdown systems cannot be established from any plant location.
2.	Abnormal NC System parameters.	from the Auxiliar Shutdown Panels.	У	AMD	2.	Other Unit conditions exist that in the judgement of the Emergency Coordinator create
	o Tech Spec figure 2.1-1 limits exceeded in Modes 1 and 2.	 Most or all annuncial capability lost in Modes 1-4. 	ator	Control of shutdown systems has been established or is in the process of being established from the Standby Shutdown Facility.		the possibility of a release of large amounts of radioactivity in a short period of time.
	o NC System pressure has exceeded 2735 psig in	o Loss of 50% or mo of the Control Ro annunciators in M	om			<u>BND</u>
	Modes 1-5.	1-4 for greater th 15 minutes.	hai. 2.	Other Unit conditions exist that in the judgement of the Emergency Coordinator		
	(Continued)	3. Other Unit condition exist that in the judgement of the Emergency Coordinate		warrant declaration of Site Area Baergency.		
		warrant entry into the Alert classification.		END		

END

CATAWBA NUCI PAR STATION EMERGENCY / ON LEVELS

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EVENT | 4.1.10 OTHER ABNORMAL PLANT CONDITIONS (continued)

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ALERT

SITE AREA EMERGENCY

GENERAL ENERGENCY

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- 3. Loss of Containment integrity requiring shutdown by Tech Specs in Modes 1-4.
 - o Any automatic Containment isolation valve which is open, inoperable and unisolable in Modes 1-4

AND

Load reduction or plant cooldown initiated in accordance with Tech Specs 3.6.1.1 and 3.6.3.

o Both airlock doors of a single airlock are inoperable in Modes 1-4

AND

Load reduction or plant cooldown initiated in accordance with Tech Specs 3.6.1.1 and 3.6.1.3.

o Any Containment penetration fails leak test per Tech Spec in Modes 1-4

AND

Load reduction or plant cooldown initiated in accordance with Tech Specs 3.6.1.1 and 3.6.1.2.

CATAWBA NUCLEAR STATION EMERGENCY / 'ON LEVELS

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EVENT \$ 4.1.10 OTHER ABNORMAL PLANT CONDITIONS (continued)

NOTIFIC	ATIO	OF
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ALERT

SITE AREA EMERGENCY

GENERAL ENERGENCY

 Loss of ESF or Fire Protection System function.

> o Both trains of an ESF function or ESF actuation system found inoperable (if caused by fire, see Event 14.1.7, under Alert classification)

AND

Load reduction or plant cooldown initiated in accordance with Tech Specs.

o Loss of all main Fire Protection System pumps.

CATAWBA NU JR STATION ENERGENCY A TON LEVELS

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EVENT | 4.1.10 OTHER ABNORNAL PLANT CONDITIONS (continued)

	NOTIFICATION OF UNUSUAL EVENT	ALERT	SITE AREA	EMERGENCY	GENERAL ENERGENCY	
5.	Significant loss of assessment or communication capability.					
	o Loss of all onsite meteorological instrumentation					
	AND					
	Inability to contact the National Weather Service for backup source of meteorological data.					

o Loss of all radio and telephone communication capability with all offsite agencies.

o Loss of 50% or more of the Control Room annunciators in Modes 5 and 6 for greater than 15 minutes.

CATAWBA NU AR STATION EMERGENCY ION LEVELS

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EVENT | 4.1.10 OTHER ABNORMAL PLANT CONDITIONS (continued)

	EVE	1		
	NOTIFICATION OF UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL ENERGENCY
5.	Transportation of a contaminated, injure4 individual from the site to an offsite medical facility.			
	o Injured contaminated individual is transported offsite with a contamination level of greater than 5000 dpm/ 100 cm ² . (See NOTE)			
	o Internal contamination requiring medical assessment/treatment.			
	o External exposure requiring medical assessment/treatment.			
	Other Unit conditions exist that in the judgement of the Shift Supervisor/Emergency Coordinator warrant increased awareness of local authorities.			
	END			

NOTE: 5000 dpm/100 cm² corresponds to 150 cpm (above background) beta-gamma as measured with a thin window pancake GM detector at one half inch from the body surface.