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October 29, 1987

Re: Indian Point Unit No. 2
Docket No. 50-247

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Revision to Emergency Action Level Tables

This letter forwards a revision of the Indian Point Unit No. 2 Emergency Action Level ("EAL") tables as committed to in our July 10, 1987 response to Inspection Report No. 50-247/87-14. These revisions to the EAL tables are intended to accommodate comments made by the representatives of the NRC Staff in the Inspection Report relating to the interaction and coordination of the EAL tables with certain emergency procedures (IP-1007 "Determination of the Magnitude of Release and Exposure Rate.") The revisions also clarify certain ambiguities noted by the Staff in determining the activities leading to a loss of offsite power Notification of Unusual Event and fuel damage General Emergency.

In addition to these changes, we are currently engaged in a major effort to revise and update the EALs generally to reflect our experience with them since 1981. These additional revisions will incorporate comments received from consultants and affected offsite governmental units, and with respect to in-plant, event-based situations, will incorporate where applicable our current understanding of the performance parameters of plant safety systems as developed from the Indian Point Probabilistic Safety Study and other analyses. This project, in which we are utilizing outside consultants and receiving the cooperation of the Institute of Nuclear Power Operations, is currently expected to be completed by the end of February 1988.

Should there be any questions, please contact us.

Very truly yours,

Murray Selman

cc: Ms. Marylee M. Slosson
Project Directorate I-1
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Mr. William Russell
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SUBJECT: Consolidated Edison Indian Point Nuclear Facility
Emergency Plan & Emergency Procedures Document

The enclosed revised pages and procedures, as indicated below, are for your assigned copy. Please discard the old pages and procedures and insert the new ones.

EPD BOOK # 1 TO BE REMOVED	EPD BOOK # 1 TO BE INSERTED
EMERGENCY ACTION LEVELS	EMERGENCY ACTION LEVELS
EAL-1 thru EAL-4 3-31-87	EAL-1 thru EAL-4 10-9-87

INITIATING CONDITIONS/EMERGENCY ACTION LEVELS FOR DECLARATION OF EMERGENCY

INITIATING CONDITION	N U E	A L E R T	S A E	G E
REACTOR COOLANT SYSTEM LEAKAGE OR LOCA	RCS leakage for more than 4 hrs > 10 gpm and < 50 gpm as verified by RCS leakage evaluation.	RCS leakage > 50 gpm (verified by RCS leakage evaluation) and within capacity of operable charging pumps to maintain pressurizer level.	RCS leakage > operable charging pump capacity as indicated by decreasing pressurizer level.	One of the following- 1. LOCA as identified in SAE with incomplete VC isolation and core TCs > 1200° F. 2. LOCA as indentified in SAE with R-25 > 3900 R/hr and VC press > 47 lbs or VC Hydrogen > 4%.
STEAM GENERATOR TUBE RUPTURE	SG leak > .30 gpm and < 50 gpm as verified by chemistry sample evaluation.	One of the following - 1. SG tube failure (> 50 gpm and < 200 gpm pri-sec leak) with loss of offsite power (138 & 13.8 KV sources). 2. SG tube failure (> 200 gpm pri-sec leak) without loss of offsite power.	SG tube failure (> 200 gpm pri-sec leak) with loss of offsite power (138 & 13.8 KV sources). EVALUATE GE FOR LOCA CATEGORY	
FUEL DAMAGE	RCS activity > 60/$\bar{E}$ as verified by chemistry sample evaluation.	Xenon-133 RCS activity > 28 uCi/cc as verified by chemistry sample evaluation.	Degraded core (same as ALERT) with possible loss of coolable geometry as indicated by valid incore TCs > 700°F. EVALUATE GE FOR LOCA CATEGORY	Severely damaged fuel as identified in SAE and containment status panel indicates incomplete isolation.
SAFETY LIMITS - HEAT SINK LOSS - CORE COOLING	Exceeds Tech Spec Safety Limits as per Section 2.1 and 2.2 of Tech Spec.	Loss of RHR and inability to maintain RCS temperature < 200°F.	One of the following - 1. Inability to establish high pressure injection flow and auxiliary feedwater flow. 2. Inability to establish service water flow and component cooling water flow.	ECCS not activated and incore TCs > 700°F.
POWER LOSS	One of the following - 1. Total loss of offsite power (138 & 13.8 KV sources). 2. Loss of onsite a-c power capability (480V buses).	One of the following - 1. Loss of all offsite & onsite a-c power. 2. Loss of all onsite d-c power.	One of the following - 1. Loss of offsite and onsite a-c power for > 15 min. 2. Loss of vital d-c power for > 15 minutes.	Failure of offsite and onsite a-c power and total loss of emergency feedwater makeup for > 2 hours.
PROTECTIVE SYSTEM FAILURE	Loss of ESF (TS 3.3) or Fire Protection System (TS 3.13) functions and shutdown has commenced as required by Tech Spec.	Anticipated Transient Without Trip (automatic and manual) and the power level is < 2%.	ATWT (automatic and manual) with the power level > 2% and no fuel damage (RCS activity < 60/$\bar{E}$) as verified by chemistry sample evaluation.	ATWT (automatic and manual) with the power level > 2% and fuel damage (RCS activity > 60/$\bar{E}$) as verified by chemistry sample evaluation.

INITIATING CONDITIONS/EMERGENCY ACTION LEVELS FOR DECLARATION OF EMERGENCY

INITIATING CONDITION	N U E	A L E R T	S A E	G E
RADIOLOGICAL RELEASE TO ENVIRONMENT	One of the following - 1. Gaseous effluent instantaneous release rate Tech Spec limits (4.8×10^{-2} Ci/sec) exceeded as calculated using IP-1007. 2. Liquid effluent concentration Tech Spec limit (R-18, R-19 > 5×10^{3} CPM) exceeded for 15 min.	One of the following - 1. Gaseous effluent release > 4.8×10^{-1} Ci/sec for > 15 minutes as calculated using IP-1007. 2. I-131 concentration in effluent which is determined by analysis to be 10 times Tech Spec limits.	One of the following - 1. Gaseous effluent release > 8.2×10^{-1} Ci/sec as calculated using IP-1007, for $\geq$ 1/2 hour with adverse MET (Pasquill F @ 1 m/sec). 2. Gaseous effluent release > 8.2×10^{0} Ci/sec as calculated using IP-1007, for $\geq$ 2 minutes with adverse MET (Pasquill F @ 1 m/sec). 3. VC activity > 200 uCi/cc noble gas measured by sampling and a VC/Weld Channel $\Delta P \geq 50$ psig. 4. Projected exposure at exclusion area boundary is; WB: $\geq$ 1 Rem but < 5 Rem THYROID: $\geq$ 5 Rem but < 25 Rem as calculated using IP-1007.	One of the following when due to core melt - 1. Gaseous effluent release > 8.2×10^{0} Ci/sec as calculated using IP-1007, for $\geq$ 1/2 hour with adverse MET (Pasquill F @ 1 m/sec). 2. Gaseous effluent release > 8.2×10^{1} Ci/sec as calculated using IP-1007, for $\geq$ 2 minutes with adverse MET (Pasquill F @ 1 m/sec) 3. VC activity > 2000 uCi/cc noblegas measured by sampling and a VC/Weld Channel $\Delta P \geq 50$ psig. 4. Projected exposure at exclusion area boundary is; WB: $\geq$ 5 Rem THYROID: $\geq$ 25 Rem as calculated using IP-1007.
SECURITY		Ongoing physical attack on the Protected Area as determined by the SWS or Watch Security Supervisor.	Ongoing physical attack involving imminent occupancy of control room and auxiliary shutdown panels by unauthorized personnel.	Physical attack has resulted in occupation of the control room and auxiliary shutdown panels by unauthorized personnel.
STEAM BREAK	Rapid secondary system depressurization.	Rapid secondary system depressurization plus pri-sec leak > 10 gpm but with no known fuel damage (< 60/E).	Rapid secondary system depressurization plus RCS activity > 60/E. EVALUATE GE FOR LOCA CATEGORY	
FUEL HANDLING ACCIDENT	Observation of event plus gaseous effluent release > 4.8×10^{-2} Ci/sec as calculated using IP-1007.	Observation of event plus gaseous effluent release > 4.8×10^{-1} Ci/sec as calculated using IP-1007.	Suspected damage to more than one spent fuel assembly OR Spent Fuel Pool water level drops 6 feet or more AND either gaseous effluent release > 8.2×10^{-1} Ci/sec for 1/2 hr. OR > 8.2×10^{0} Ci/sec for 2 minutes as calculated using IP-1007.	
FIRE	Fire (with flame) lasting > 10 min within the DG, Control, Fuel, Aux, Turbine or Containment Buildings which may affect safety related equipment.	Fire (with flame) potentially affecting a safety system required for the present mode of operation.	Fire damage which prevents any train or portion of a safety system function which is required for the present mode of operation.	
LOSS OF ALARMS	Instruments or alarms on process or effluent parameters not functional in Control Room to an extent requiring plant shutdown as defined in Tech Spec Section 3.5.	Unscheduled loss of all Control Room alarms when Plant is not in cold shutdown and other means of monitoring vital plant parameters are not available.	All alarms lost in the Control Room and plant not in cold shutdown and plant transient initiated while all alarms are lost.	

INITIATING CONDITIONS/EMERGENCY ACTION LEVELS FOR DECLARATION OF EMERGENCY

INITIATING CONDITION	N U E	A L E R T	S A E	G E
HAZARDS	One of the following – 1. Aircraft crash onsite. 2. Unplanned onsite explosion.	One of the following – 1. Aircraft crash into plant structures but not causing damage to vital structure. 2. Missile emanating from failed equipment resulting in major damage to vital structure. 3. Explosion resulting in major damage to vital structure. Vital structure contains safety related equipment.	One of the following with the plant not in cold shutdown – 1. Aircraft crash causing damage to safe shutdown equipment. 2. Missile emanating from failed equipment causing damage to safe shutdown equipment. 3. Explosion causing damage to safe shutdown equipment.	
NATURAL PHENOMENA	One of the following – 1. Onsite seismic activity verified by Unit 3 plant instruments. 2. Flood level at ≥ 13.9' and < 15.0' (0 MSL) at site. 3. River water level < – 4.5' (0 MSL) at site. 4. Any tornado being observed on site. 5. Hurricane with > 100 mph winds and potential to affect site and unit cold shutdown commenced.	One of the following – 1. Earthquake at site > 0.1g verified by Unit 3 plant instruments and plant not in cold shutdown. 2. Flood level at 15.0' (0 MSL) at site. 3. Tornado striking facility buildings. 4. Hurricane NUE classification already declared and sustained wind speeds > 40 mph onsite.	One of the following – 1. Earthquake at site > 0.15g verified by Unit 3 plant instruments. 2. Flood level > 15.0' (0 MSL) at site. 3. Sustained winds onsite > 100 mph and RCS > 350°F.	
TOXIC/FLAMMABLE GAS	Onsite release or entry to site of toxic or flammable gas of a magnitude that threatens personnel.	Uncontrolled entry of toxic or flammable gases into the facility environs which exceed the limits of toxicity or flammability as determined by chemist.	Entry of toxic or flammable gases above toxic or explosive levels into vital areas, i.e., control room cable spreading room, containment, switch gear room, safe shutdown panels or emergency diesel generator rooms and which renders a train of a safety related system inoperable.	
TURBINE	Turbine rotating component failure causing rapid plant shutdown.	Turbine failure causing casing penetration.		
CONTROL ROOM EVACUATION		Evacuation of control room anticipated or required with control of shutdown systems established from local stations.	Evacuation of control room and control shutdown systems not established from local stations in 15 min.	
CONTAINMENT INTEGRITY	Shutdown commenced in accordance with Tech Spec Section 3.6.5.			

INITIATING CONDITIONS/EMERGENCY ACTION LEVELS FOR DECLARATION OF EMERGENCY

INITIATING CONDITION	N U E	A L E R T	S A E	G E
HIGH INPLANT RAD LEVELS		Sustained high radiation levels which indicate a severe degradation in the control of radioactive material as indicated by <u>one of the following</u> ARM readings; 1. Control Room > 1 R/hr 2. VC Airlock > 50 R/hr 3. Charging Pump Room > 2 R/hr 4. Fuel Storage Building > 2 R/hr 5. Sampling Room > 15 R/hr 6. VC Incore Instrument Room > 50 R/hr 7. Drumming Station > 50 R/hr <u>or</u> Unexpected general iodine or particulate airborne concentration greater than 1000 MPC(a). (a) MPC in Table 1, Column 1 of 10 CFR 20.		
OTHER	<u>Any one of the following</u> - 1. Transportation of contaminated injured individual from site to hospital. 2. ECCS valid initiation with discharge to vessel.	RCP locked rotor with <u>all the following</u>; a) RCP auto trip alarm. b) Reactor trip on low RCS flow. c) RCP phase OC relay activation. d) Tech Spec safety limit exceeded as per Section 2.1.		