August 8, 2003

MEMORANDUM TO: David L. Skeen, Acting Program Director
Policy and Rulemaking Program
Division of Regulatory Improvement Programs, NRR

FROM: Peter C. Wen, Project Manager ***/RA/***
Policy and Rulemaking Program
Division of Regulatory Improvement Programs, NRR

SUBJECT: SUMMARY OF AUGUST 1, 2003, MEETING WITH THE NUCLEAR ENERGY INSTITUTE TO DISCUSS PRELIMINARY RESULTS OF THE DATA COLLECTION FOR THE ON-SHIFT AND AUGMENTATION STAFFING PROJECT

On August 1, 2003, the Nuclear Regulatory Commission (NRC) staff held a public meeting with a representative from Nuclear Energy Institute (NEI) and industry representatives at NRC headquarters. The purpose of the meeting was to discuss the preliminary results of the Seabrook data collection effort and lessons learned by Seabrook while collecting data in support of the shift staffing and augmentation project. The meeting attendees are listed in Attachment 1.

Brookhaven National Laboratory (BNL) contract personnel presented information related to project goals and objectives, tasks and deliverables, emergency response functions, methods of analysis, and data collection. BNL's presentation materials are included in Attachment 2.

The representative from Seabrook presented the lessons that were learned as a result of completing the data collection forms. The NEI Emergency Preparedness Shift Staffing Issue Task Force suggested revisions to the operations data request scenarios (Attachment 3). Issues discussed included the following: (1) the need to develop a scenario(s) to support the data collection form associated with the emergency response organization response, (2) the need to revise and clarify the data collection forms and instructions, and (3) the potential impact of the terrorism vulnerability studies presently underway.

The staff, BNL, and NEI representatives agreed that the following items will be followed up:

- BNL will revise the operations scenario based upon suggestions from the NEI Task Force.

- BNL will also revise the data collection forms and instructions based upon the lessons learned from the data collection effort at Seabrook.

- In order to resolve issues related to the emergency response scenarios, NEI has agreed to engage the Electric Power Research Institute to support the scenario development phase of the project, but has informed the NRC and BNL that agreement on the emergency response scenario is needed before continuing with further data collection.

Representatives of the NRC and the industry agreed that this meeting had been useful for the exchange of information on the discussion topics. Having completed discussion of the agenda items, the meeting was adjourned.

Project No. 689
Attachments: As stated
cc w/att: See next page

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ATTENDEES LIST
NRC/NEI MEETING ON DEVELOPMENT OF RADIOLOGICAL
EMERGENCY ON-SHIFT AND AUGMENTATION STAFFING GUIDANCE
FOR NUCLEAR POWER PLANTS

AUGUST 1, 2003

	NAME	ORGANIZATION	TITLE/POSITION
1.	John Kaminski	CEG/Nine Mile	EP Specialist
2.	Alan Nelson	NEI	Sr. Project Manager
3.	Tom Sowdon	Entergy	Manager, EP
4.	Don Mothena	FP&L	Manager, Plant Services
5.	Brian Haagensen	PSHA/BNL	Consultant
6.	Frank Pavlechko	TVA	Manager, EP
7.	Cyrus Anderson	SCE/SONGS	Manager, EP
8.	Joseph Anderson	Exelon	EP Specialist
9.	Lane Hay	SERCH Bechtel	Sr. Engineer
10.	Tim Laursen	RG&E/Ginna	Manager, EP and Training Support
11.	Bob Brady	Exelon/TMI	Manager, EP
12.	George Hamrick	Duke Energy	Manager, Nuclear Services
13.	Deann Raleigh	LIS,Scientech	Client Manager
14.	David Young	FP&L Energy - Seabrook	EP Coordinator
15.	Theodore Dalpiaz	PP&L Susquehanna	EP Planner
16.	Jim Higgins	BNL	Group Leader
17.	Mano Subudhi	BNL	Engineer
18.	Kevin Williams	NRC	Health Physicist (EP)
19.	Craig Banner	PSE&G Nuclear, LLC	EP Supervisor
20.	David Bauguess	First Energy Corp. - Perry	EP Supervisor
21.	Dan Barss	NRC	Sr. EP Specialist
22.	Sonya Haber	HPA/BNL	Contractor
23.	Bob Moody	NRC	EP Specialist
24.	Walter H. Lee	Southern Nuclear	EP Coordinator
25.	Autumn Szabo	NRC	Human Factors Analyst

Attachment 3

Suggested Revisions to Operations Data Request Scenarios

For the following three scenarios for each plant type, please provide the staffing related data as shown.

- BWRs:
  1. Station Blackout (SBO) with fire and
  2. Main Control Room (MCR) Fire and Evacuation.
- PWRs:
  1. Steam Generator Tube Rupture (SGTR) and
  2. MCR Fire and Evacuation.

These events were selected because they are the dominant contributors to risk (both CDF & LERF), and also because they are among the more challenging scenarios for operations personnel to handle and hence are demanding from a staffing standpoint. We recognize that they are improbable and beyond the standard deterministic design basis events. Nonetheless, similar accidents have occurred and we believe they are appropriate to consider for emergency planning purposes.

Description of Scenarios:

Time	Malfunction	Expected activity
00:00	Initial conditions: Rx at 100% power ECCS all available Middle of core life 2:00 am on a Saturday morning. Normal shift compliment.	

1. Station Blackout (SBO) with fire.

BWR Station Blackout Timeline		
Time	Malfunction	Expected activity
00:00	SBO diesel out of service for duration of event.(if applicable unless this is the source of high pressure injection)	
00:05	Fire indication in switchyard associated with station output transformers	Fire Brigade is dispatched
00:10	Loss of Offsite power commenced as a grid disturbance takes out the main generator, and loss of offsite station feed.	Turbine trip, reactor scram, diesels start and load onto emergency busses. Turbine bypass valves respond as intended. SRVs respond as intended. RCIC/HPCI respond as designed
00:20	Fire is out	Station reflash watch
00:25		Classify emergency , commence notifications

00:30	Loss of all diesels. (include SBO if this is the source of high pressure injection)	Enter SBO procedure
00:45		Upgrade classification.
01:00	Loss of one source (if needed) such that you have one low capacity steam driven pump left available	
01:30 – 02:00	(Time dependent upon plant actions necessary to align fire water source) Fire water source lined up and ready to commence injection	Initiate depressurization if not yet done
02:00	Vent containment if necessary	

2. Main Control Room (MCR) fire with MCR evacuation

A fire in the Main Control Room requires the control room to be evacuated at 5 minutes following identification of the fire. Fire brigade response is required. Operation of the plant from the remote shutdown panels and/or from a variety of local control stations is the intent of the scenario. The assumption is that the Control Room completes whatever procedurally required actions are dictated prior to control room evacuation. Run the scenario and collect data for 120 minutes. No other scenario malfunctions or equipment related transients occur as a result of the fire.

3. Steam Generator Tube Rupture (SGTR)

An instantaneous 550 gpm SG tube rupture occurs. The tube rupture is expected to result in a RX trip and SI. A SG PORV (atmospheric dump)(if plant does not have a PORV then use a single lowest flow safety relief valve) on the ruptured SG opens or fails open and sticks open at 2 minutes after the RX Trip. The goal is to have either one PORV or safety relief valve stuck fully open on the ruptured SG at 2 minutes following the RX trip.

When the SG tube ruptures, primary coolant flows into the SG immediately and mixes with the clean SG secondary water. This release is directly to the outside atmosphere and includes primary coolant that has leaked to the SG. Based on the pressure drop in the RCS due to the SGTR, there is 1% clad damage in the reactor core and a release of fuel element gap activity from the damaged fuel to the reactor coolant. This is released along with the reactor coolant through the ruptured tube and out of the SG PORV. We assume that the SG PORV sticks open, creating a continuous flow to the outside atmosphere until the operators are able to equalize pressures between the primary and secondary systems in order to stop the primary coolant leakage (ie…atmospheric pressure). The intent of the scenario is to consistently drive the classification to a site area emergency, using the NUMARC guideline (or NUREG-0654) approach. Run the scenario and collect data for 120 minutes.