



Pacific Northwest Laboratories

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December 28, 1987

Mr. W. M. Sartor
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street
Suite 3100
Atlanta, GA 30303

Dear Bill:

GRAND GULF EXERCISE, November 17, 1987

Enclosed is the final report of Michael Stein who was the Pacific Northwest Laboratory (PNL) participant during the subject exercise. Only minor changes have been made to the draft given to you prior to his leaving the site. The areas covered by Mr. Stein included the CR and TSC.

If you have any questions regarding this report, please contact me on FTS (509)375-3782.

Sincerely,

J. D. Jamison
Technical Leader
Emergency Preparedness Group
Health Physics Technology Section
HEALTH PHYSICS DEPARTMENT

JDJ:t1e

Enclosure

cc: DB Matthews, w/enclosure

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GRAND GULF ANNUAL EXERCISE

November 17, 1987

- A. Name: Michael Stein
- B. Assignment: Observe control room response through activation of the TSC, then observe TSC activities through the remainder of the exercise.
- C. Site Personnel Contacted: C. Morgan, Exercise Director; L. Robertson, Chief Controller; D. Bottomiller, Control Room Controller; D. Wells, TSC Controller.
- D. Positive Findings
- A coordinated, well-rehearsed exercise response capability was demonstrated. The initial classification made in the control room was correct and timely. The initial notification of state and local response organization was accurate and made within fifteen minutes of event declaration.
 - The TSC was activated expeditiously (within thirty minutes of ALERT declaration). The transfer of control between the Emergency Director (ED) in the control room and the on-call ED was performed in a systematic manner that minimized disruptions.
 - The ED was sensitive to the routine aspects of emergency response such as log keeping, updating status boards, periodic updates of state and locals, public information releases, and frequent briefings of the TSC staff. The superior performance of the ED and TSC personnel in those areas provided a stable foundation from which to solve the larger problems of event mitigation, dose projection, and recommendation of protective actions.

- The layout of the TSC was very effective; it was functional, contributed to good communications among TSC staff and resulted in an acceptably low noise level.
- Strong performance by three key members of the TSC response organization were noted. The ED, TSC Coordinator, and Radiological Protection Manager (RPM) were all aggressive in pursuing their responsibilities, showed foresight in anticipating degraded plant and radiological conditions, and remained enthusiastic participants throughout the exercise.

E. Negative Findings

- The TSC Coordinator routinely authorized the dispatch of teams from the OSC without conferring with the ED.
- Meteorology data was constant throughout the exercise, which is not realistic.

Although large wind shifts are not required, normal variations in met conditions provide stimuli for revised dose projections and ongoing decision-making regarding the safety of onsite personnel. Varying met data also provides a discrete piece of information that can be used to judge the adequacy of communications from the RPM to the Health Physics Coordinator in the OSC, then to departing in-plant teams during briefings.

F. Chronology

<u>Time</u>	<u>Observation</u>
0730	Exercise started.
0815	Division 3 D/G started for surveillance.
0820	Fire reported in Division 3 generator room.
0821	Fire announced on PA system; fire brigade dispatched.
0824	Emergency plan placed in effect; ALERT declared.

Time	Observation
0830	Message #1 transmitted via hotline to state and locals.
0825	ALERT passed on PA system.
0830	Message #1 transmitted via hotline to state and locals.
0835	Call completed; Port Gibson police did not answer.
0836	Call placed to Port Gibson police.
0839	Notification call made to NRC.
0840	Commenced reactor shutdown.
0846	Fire reported to be under control.
0849	Headset manned to TSC; SS reviewed check list from EPP.
0850	Fire reported out.
0852	PA announcement made that fire was out.
0855	CR communicator dispatched to TSC to turn over to TSC communicator.
0856	Hutchinson relieved as ED; announced in CR and TSC.
0900	ED briefed TSC staff.
0904	Checklist reviewed by TSC with CR.
0908	Radiation Protection Manager directed all hands to get dosimetry from Health Physics before leaving the TSC.
0914	ED agreed on recovering the Division 1 D/G with Ops Coordinator.
0916	ED briefed TSC staff.
0919	Follow-up notification made to state and locals.
0936	ED briefed TSC staff.
	- First priority is to recover Division 1 D/G
	- Second priority to assess/recover Division 3 D/G bus
0944	TSC Coordinator briefed ED on status of Division 1 D/G.

Time	Observation
0948	TSC Coordinator briefed ED on status of Division 1 D/G; 16 hrs to recover.
0950	ED briefed TSC staff from 0730 command messages.
0958	TSC Coordinator decided that repair of Division 1 D/G was still #1 priority.
1000	OSC directed to seal all penetrations as quickly as possible.
1013	Loss of one source of offsite power reported.
1015	Loss of power simulated in TSC; loss of all offsite power; Division 2 D/G failed to start.
1017	ED briefed TSC staff; ED declared SAE without waiting 15 minutes because overall conditions were degrading and there was no reason to expect power loss to be less than 15 minutes.
1020	ED briefed TSC staff; RPM recommended evacuating areas downwind of station.
1030	OSC reported that a team had been dispatched to Division 2 D/G.
1043	Site Access Point (SAP) reported activated at 1040.
1044	ED briefed TSC staff.
1050	ED directed TSC to develop method for drawing containment drywell air sample under loss of power conditions.
1053	NEMA requested level data; TSC provided.
1055	Discussion held between ED and RPM; recognized need to de-energize H2 ignitors before restoring power.
1100	No problems found during trouble shooting of Division 2 D/G. Fuel oil samples planned; Division 2 first.

<u>Time</u>	<u>Observation</u>
1104	TSC Coordinator directed CR to place switches for H2 ignitors to "off".
1112	TSC Coordinator directed OSC to open access cover to steam tunnel and shut a valve to isolate containment.
1115	Division 2 D/G restart attempted; failed to start.
1119	ED briefed TSC staff on status of EOF activation.
1125	TSC Coordinator directed OSC to research jumpering out RCIC high exhaust system trip.
1128	ED briefed TSC staff on turnover to EOF.
1132	Contaminated fuel reported in Division 2 D/F fuel tank; ED directed that dry tank be sampled and "stripped" if contaminated.
1136	EOF reported activated.
1140	Decision made to leave RCIC suction on suppression pool.
1149	ED directed that a 24 hr shift rotation be developed.
1158	Division 1 and 3 storage tanks reported contaminated with water.
1216	RCIC reported tripped - steam line break.
1218	Unable to isolate RCIC; steam tunnel rupture disks out; release in progress.
1220	Level below top of active fuel; ED advised that SAE still applicable.
1224	RPM recommended evacuating personnel from site.
1225	ED briefed TSC staff; TSC support recommended General Emergency.
1235	ED declined GE after consulting with Ops Coordinator and EOF, decision based on Radiation detector reading indicating fuel damage had occurred.
1236	Loss of fire pumps reported.

<u>Time</u>	<u>Observation</u>
1300	OSC reported man missing from repair team.
1330	Received printout from security with location of missing man.
1334	ED briefed TSC staff.
1344	Division 2 D/G reported ready for restart (day tank refilled)
1350	ED briefed TSC staff.
1351	Division 2 D/G reported running.
1355	ED briefed TSC staff
	- RCIC isolated
	- Injection started; level above top of active fuel
1359	Zero percent H2 reported.
1400	Standby gas treatment system reported in service.
1410	Offsite power restored.
1430	ED briefed EOF on plans for recovery.
1456	ED Briefed TSC staff.
1500	Exercise terminated.