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REGION III

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Report No. 50-255/96013(DRS)

Licensee: Consumers Power Company

Facility: Palisades Nuclear Generating Plant

Location: 27780 Blue Star Memorial Highway
Covert, MI 49043-9530

Dates: October 21 - October 25, 1996

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EXECUTIVE SUMMARY

Palisades, Unit 1
NRC Inspection Report 50-255/96013(DRS)

This inspection included evaluation of performance during the plant biennial emergency preparedness exercise and review of previous open items. It was an announced inspection conducted by regional and resident inspectors.

The exercise was an adequate demonstration of the licensee's capabilities to implement its emergency plans and procedures. Event classifications, offsite notifications and offsite protective action recommendations were correct and timely and were program strengths. Transfers of command and control were appropriately coordinated. (Section P4.1.c)

The licensee's post-exercise critiques were good. (Section P4.1.c)

The performance of staff within the Simulator Control Room and TSC contributed to the demonstration of your fundamentally sound emergency response program. The concerns relating to specific issues involving activities in the EOF and particularly the OSC detracted from the program. Inspection Followup Items were identified relative to: display of in-plant radiation data in the OSC (Section P4.b.3); use of personal air samplers by in-plant teams (Section P4.b.3); tracking of in-plant team's activities in the OSC (Section P4.b.3); review of the functions of the Emergency Operations Facility (EOF) Engineering Support Group (Section P4.b.4); and determination of the need for a Security Liaison in the EOF (Section P4.b.4)

Report Details

P3 EP Procedures and Documentation

P3.1 Review of Exercise Objectives and Scenario (82302)

The inspectors reviewed the 1996 Emergency Preparedness (EP) exercise's objectives and scenario and determined that they were acceptable. The scenario provided an adequate framework to support demonstration of the licensee's capabilities to implement its emergency plan. Although adequate, the scenario was not overly challenging or complicated.

P4 Staff Knowledge and Performance in EP

P4.1 1996 Evaluated Biennial EP Exercise

a. Inspection Scope (82301)

The inspectors evaluated licensee performance in the following emergency response facilities:

- Control Room Simulator
- Technical Support Center
- Operational Support Center
- Emergency Operations Facility

b. Observations and Findings

b.1 Simulator Control Room

Overall performance in the Simulator Control Room was very good. The simulator crew recognized the symptoms of a steam generator tube rupture quickly. Crew personnel quickly estimated, then quantified the leakrate quickly. It was rapidly recognized that the leak was more than 50 gpm, and the crew was advised to expect a reactor trip.

When the Condenser offgas radiation alarmed, and the main steam radiation monitor went to alert, Alarm Response Procedure (ARP)-8 was properly used. The proper decision was quickly made to manually trip the reactor, and utilize Emergency Operating Procedure (EOP) 1.0 after manual trip of the reactor. A public address message advised of the reactor trip and recalled all Auxiliary operators to the Control Room.

The shift Supervisor made the Alert classification and a communicator made the initial notification and updates in a timely manner. The Duty and Call Superintendent and Shift Supervisor both confirmed that actions to be performed were in accordance with procedure EI-1, and reviewed which notifications were

required for the classification. Operator aide 113 provided guidance for making the public address announcement, which properly included the classification and the reason for the classification.

Notifications were promptly and efficiently made using the speed dialer. The simulated NRC response cell interface appeared somewhat unrealistic. The cell asked four questions and did not initially request an open line, which is standard NRC practice. Communications in the Control Room were good - addressing the person by name, with "repeat back" and conformation of understanding. Periodic briefings kept the shift personnel of overall event response. Communications with other areas were generally good.

When the Primary Coolant Pump vibration alarm occurred, the alarm procedure was consulted, calling for confirming high vibrations and a manual trip of the pump. Operators performed these actions very quickly, about 30 seconds before the scenario would fail the pump.

The Duty and Call Superintendent properly remained in the simulator Control room until cognizant of ongoing events, then departed for the TSC (immediately outside the real Control Room).

Late in the scenario, the Control Room staff looked ahead and realized that plant conditions precluded performing the Shutdown cooling procedure step-by-step. The Control Room staff held several discussions on how this procedure could be accomplished. Discussions were also held with EOF engineering staff.

b.2 Technical Support Center (TSC)

The overall performance of TSC responders was very good. The TSC was promptly staffed and activated in an orderly manner following the Alert declaration. Changes made to the facility staffing board since the last observed exercise, specifying minimum staffing, worked well.

Transfers of command and control of event response to and from the TSC's Site Emergency Director (SED) were done in a timely and well coordinated manner. TSC staff and other onsite personnel were informed of those command and control transfers, other major decisions and major plant status changes in a timely manner through the use of TSC's and plant's Public Address (PA) systems. An Assistant SED, an emergency planning advisor and a dedicated logkeeper provided excellent support to the SED.

Briefings of the TSC staff were effectively and efficiently performed by utilizing a cordless microphone passed between group leaders. Those periodic briefings kept all TSC personnel well informed of changing plant conditions, major decisions and revised priorities. An early briefing was made to support activation of the EOF.

Priorities were correctly revised as plant conditions changed. Plant cooldown was correctly recognized as the highest priority and the "success path" to terminate the

simulated release was selected. The Operations Group Leader and staff closely monitored the cooldown rate and kept the TSC staff informed of any plant conditions that affected the cooldown rate. The Operations group also closely monitored the status of EOP implementation.

Key TSC staff properly weighed the potential radiation exposures to several sampling and maintenance inplant teams versus the value of completing these tasks. An example of this was the decision to lower the priority assigned to obtaining a reactor coolant sample until The Post Accident Sampling Monitor (PASM) system dose rates decreased.

Status boards were effectively used to accurately display information on major events, key decisions, current priorities and the status of inplant team activities. Status board information served as a good backup information source to the verbal briefings.

Open line Emergency Notification System (ENS) communications were correctly maintained with simulated NRC responders once the TSC's SED assumed command and control of event response. ENS communications were transferred to EOF staff once the EOF Director assumed overall command and control.

Onsite protective actions were implemented in accordance with the emergency plan. Accountability of all onsite personnel was promptly initiated after the Alert declaration. A prudent decision was made to initiate the evacuation of non-essential onsite personnel when indications of a main steam line break outside of the containment were received shortly before the EOF Director reclassified the event as a Site Area Emergency. The SED and Health Physics Group Leader demonstrated proper concern for ensuring that the site evacuation route would have minimized radiation exposures.

Simulated dose rates in the TSC were monitored. The SED and Health Physics Group Leader kept TSC staff adequately informed of the TSC's simulated radiation level and the criterion for TSC staff relocation, which was never approached.

Two offsite radiation survey teams were activated following the Alert declaration. Their initial deployment strategy was reasonable, allowing early detection of the simulated radioactive release. The potential for an unmonitored release was clearly recognized, which placed greater importance on reports from these survey teams.

TSC staff could have been more proactive in identifying additional OSC staffing needs between the time that onsite personnel were accounted for and the time that a decision was made to evacuate non-essential personnel. For example, although TSC staff were aware that the control room crew were implementing EOP 5.0, the need for additional auxiliary operators (AOs) was not recognized. Late in the exercise, a request was made to have five additional AOs report back to the site to assist in completing EOP 5.0.

TSC and EOF engineering staff did not relate the shutdown of a reactor coolant pump for high vibration as being related to the cause of fuel clad degradation. The scenario postulated that the pump's internal components came apart and caused fuel clad damage. Both engineering groups were unaware of the postulated one percent fuel damage, in part because:

Plant support engineers did not consider mechanical fuel damage for the increased primary coolant system activity during the exercise. Engineers assumed the release was from normal primary coolant system activity.

The engineers were unable to determine the cause of the primary coolant system activity increase, partially because chemistry sample information was never reported to the EOF for determining possible causes of the increased plant radiological levels.

b.3 Operational Support Center (OSC)

Overall performance in the OSC was adequate. The OSC was declared operable in a timely fashion. Good command and control of the facility was displayed by the OSC Director. Repeat-backs of information were frequently observed. Facility update briefings were frequent and comprehensive. The OSC maintained priorities in concert with the TSC and assembled in-plant teams as needed. The revised resource and team tracking boards functioned well.

All HP instruments reviewed were in current calibration and were functional. A team briefing/debriefing checklist was utilized, and observed team briefings were good.

In-plant radiation survey information was not displayed in the facility. The information was provided to the radiation safety coordinator who in turn provided this to personnel assembled for in-plant teams. This limited other HP and maintenance personnel from being able to review in-plant radiological conditions to fully understand radiation levels particularly with respect to conditions en route to work areas. This was directly observed during a briefing in which the exact conditions were not readily available to the HP technician performing the briefing; therefore, radiological information was requested from the radiation protection technician who surveyed the area. Similarly, two teams were observed which left the OSC and went to the TSC and requested radiological information from the RP Director. This limited overall timeliness of the team's response into the plant. This will be an Inspection Followup Item (05000255/96013-01).

During observation of two in-plant teams, Chemistry individuals were provided with lapel air samplers. The samplers were placed under the workers' Protective Clothing (PCs) (lab coat) per procedure; however, the head of the air sampler did not protrude outside the PCs as required for a representative sample. Palisades HP procedure 2.19 states that samples should protrude through the PCs. This was discussed with the health physics staff who immediately began corrective action. This will be an Inspection Followup Item (05000255/96013-02).

It was not evident that in-plant team location or status was continuously known. Some teams did not have radios. The team briefing checklist specified that 30 minute phone contact updates are required. Telephone contacts with the teams were not observed, and at times the OSC Director had to ask the location of teams. Actions to review this problem will be an Inspection Followup Item (05000255/96014-03).

Habitability monitoring of the facility was good. When radiological conditions were increasing in one area of the OSC, the OSC Director moved the table arrangements to allow for lower doses to the individuals manning the OSC positions.

b.4 Emergency Operations Facility (EOF)

Overall performance in the EOF was very good. Activation of the EOF was rapid and efficient. Six helpers achieved facility setup in less than 30 minutes. Facility staff effectively initiated communications with each of their contacts. An initial briefing by the EOF director provided good coordination for the staff and a goal for activation.

The EOF Director coordinated periodic concise facility briefings with functional area leads that kept the staff informed of important plant emergency conditions. Status boards were legible and continuously updated with current emergency information.

After fixing an actual phone problem for a meteorological tracking computer, the health physics group proactively tracked the weather, weather forecasts, and provided dose projections using plant radiological monitor information and offsite field monitoring team information.

The health physics group was proactive in dose assessment, offsite monitoring team coordination and communication, meteorological condition tracking. The dose assessor continuously provided dose projections for the 15 minutes notifications to the State. The dose assessment group quickly identified a wind shift when it began to occur, communicated the information that the affected sectors would be changing, and considered the rate of wind shift.

The emergency preparedness planner provided excellent support to the EOF. The planner ensured equipment operability, staffing lists, and completion of status boards, logs, and records.

The EOF director and health physics team leader provided informative periodic offsite communications to the State of Michigan and NRC. Protective action recommendations, onsite and offsite dose rates, and event classification were discussed by phone with the State and NRC.

A problem was observed obtaining a second offsite monitoring team when requested numerous times by the health physics team leader. Additionally, the EOF was unaware of the one percent fuel damage nor did they effectively pursue the possibility of fuel damage.

The engineering support team initially expressed concern and completed some evaluation regarding modification of the shutdown cooling procedure. However, the team leader occasionally had a less than proactive approach, and it appeared the group mission, purpose, roles and responsibilities may not be well defined or understood. Discussion with the Emergency Planning group indicated that the function of the Engineering Support Group was one of the items scheduled for self-assessment in 1997. The results of this self-assessment will be an Inspection Followup Item (05000255/96013-04).

There was no representative of the security organization in the facility to evaluate the event. The usual function of such an individual is as Security Director responsible for onsite and offsite security including accountability, review of possible sabotage onsite (dry casks, terrorism, bombs, media, etc.), and keeping the Security organization abreast of ongoing events/security challenges. No briefings were provided regarding security events for the EOF staff. Review of whether such a position is needed will be an Inspection Followup Item (05000255/96013-05).

b.5 Recovery and Reentry Discussions

The initial TSC onsite reentry/recovery discussion was adequate. The Assistant SED led part of this discussion, while the SED was on a conference call with an EOF counterpart. Some participants seemed unsure of the goals of this initial planning discussion and what was sufficient to satisfy this exercise objective. The NRC evaluator was asked by a controller to brief the group on NRC's longer-term incident investigation and incident response activities, as well as DOE's lead role in Federal Radiological Monitoring and Assessment Center (FRMAC) activities, to clarify and elaborate a few points. This request and the discussion indicated a need for further thinking on the goals of an initial onsite recovery discussion and further internal sharing of information on NRC's incident response plan and incident investigation responsibility. Recovery discussions in the EOF were very good.

b.6 Exercise and Scenario Control

There were sufficient numbers of personnel to control the exercise. Although no significant examples of controllers prompting participants to initiate actions were identified, NRC inspectors observed that one controller had difficulty maintaining appropriate controller demeanor. The controller was observed on several occasions providing suggestions and evaluatory comments. This was discussed with the EP staff. Licensee controllers held adequate critiques in each facility following the exercise.

TSC controllers revised the "prognosis" entry on one State update message form from "stable" to either "uncertain" or "degrading" to better ensure that activation of the State Emergency Operations Center (SEOC) would begin after the Alert declaration. (Per the State's plan, SEOC activation is not required until the State is either informed of a Site Area Emergency declaration or an Alert declaration having a degrading or an uncertain prognosis by the licensee.) This prompt was necessary to preserve the offsite scenario timeline.

Controllers injected a wind direction shift during the latter portion of the exercise to support a State objective regarding demonstrating the capability to revise offsite protective actions in response to changing environmental or changing plant conditions. This demonstrated excellent exercise control.

The EOF facility critique immediately after the exercise was very good. Controllers and participants provided good comments on performance and activities. The critique was appropriately self critical and issues were recorded for later evaluation. The licensee's overall critique process was highly detailed and self-critical.

b.7 Collocation of NRC Site Team

During the routine inspection, it was noted that collocation of the NRC site team had not been provided for in the TSC and EOF. Following observation of the TSC in operation, and a review its layout and that of the EOF, the most effective positions for the NRC site team members were determined. The telephones they would utilize were also identified. This information was annotated on facility diagrams and discussed with the Emergency Planning staff.

c. Conclusion

The exercise was a good demonstration of the licensee's capabilities to implement its emergency plans and procedures. Event classifications, offsite notifications and offsite protective action recommendations were correct and timely. Transfers of command and control were appropriately coordinated.

The licensee's initial post-exercise critiques were good.

P8 Miscellaneous EP Issues

(Closed) Exercise Weakness/Inspection Followup Item (255/95013-01): During the 1995 exercise, activation of the TSC was inadequate. During this exercise activation of the TSC was effectively performed. Adequate personnel were present to perform TSC responsibilities when the facility was activated. This item is closed.

(Closed) Inspection Followup Item (255/95013-02): During the 1995 exercise, briefings in the TSC were time-consuming and ineffective. Briefings in the TSC during this exercise were efficient, timely and adequately detailed manner, utilizing a remote microphone. This item is closed.

X1 Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on October 25, 1996. The licensee acknowledged the findings presented.

The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee:

T. Palmisano, Plant Manager
M. Mennucci, C & RS Manager Alternate
K. Haas, Training Manager
R. Vincent, Licensing Supervisor
C. Kozvp, Licensing Engineer
E. Karpe, Emergency Planning Section Supervisor
J. Brunet, Emergency Planning Coordinator
N. Brott, EP Planner
M. Hobe, EP Planner
K. Penrod, EP Planner

NRC

P. Prescott, Resident Inspector, Palisades
J. Creed, Chief, Plant Support Branch 1

INSPECTION PROCEDURES USED

IP 82301 Exercise Evaluation
IP 82302 Exercise Scenario Review

ITEMS OPENED

50-255/96013-01	IFI	In-plant radiation survey information not displayed in the OSC.
50-255/96013-02	IFI	Air sampler head should protrude from clothing.
50-255/96013-03	IFI	In-plant team location or status not continuously known.
50-255/96013-04	IFI	The function of the Engineering Support Group self-assessment in 1997.
50-255/96013-04	IFI	No senior representative of the security organization in the EOF.

ITEMS CLOSED

50-255/95013-01	IFI	TSC activation was unsatisfactory
50-255/95013-02	IFI	TSC briefing process inefficiencies

LIST OF ACRONYMS USED

AOS	Auxiliary Operators
ARP	Alarm Response Procedure
CFR	Code of Federal Regulations
EAL	Emergency Action Level
EP	Emergency Preparedness
ENS	Emergency Notification System
EOF	Emergency Operations Facility
EOP	Emergency Operating Procedure
EPIP	Emergency Plan Implementing Procedure
ERO	Emergency Response Organization
FRMAC	Federal Radiological Monitoring and Assessment Center
IFI	Inspection Followup Item
IR	Inspection Report
NPAD	Nuclear Performance Assessment Department
NRC	Nuclear Regulatory Commission
OSC	Operational Support Center
PA	Public Address
PALEX	Palisades Exercise
PASM	Post Accident Sampling Monitor
PCs	Protective Clothing
SEOC	State Emergency Operations Center
SQV	Site Quality Verification
TS	Technical Specification
TSC	Technical Support Center
SED	Site Emergency Director