U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-255/86015(DRSS)

Docket No. 50-255 License No. DPR-20

Licensee: Consumers Power Company
212 West Michigan Avenue
Jackson, MI 49201

Facility Name: Palisades Nuclear Power Plant

Inspection At: Covert, Michigan

Inspection Conducted: May 12-16, 1986

Inspector: J. Patterson J. Patterson June 5, 1986
Date

J. Patterson for June 5, 1986
T. Allen Date

J. Patterson for June 5, 1986
Approved By: W. Snell, Chief Date
Emergency Preparedness Section

Inspection Summary

Inspection on May 12-16, 1986 (Report No. 50-255/86015(DRSS))
Areas Inspected: Special, announced inspection of the following areas of the emergency preparedness program: emergency detection and classification, protective action decisionmaking, notifications and communications, changes to the emergency preparedness program, shift staffing and augmentation, dose calculation and assessment, licensee audits, maintenance of the emergency preparedness program, and licensee corrective actions taken to improve the emergency preparedness program. The inspection was conducted by two NRC inspectors and two consultants.
Results: No violations, deficiencies or deviations were identified as a result of this inspection.

DETAILS

1. Persons Contacted

*J. Firlit, Plant General Manager
*J. Lewis, Technical Director
*R. Rice, Nuclear Plant Operations Manager
*P. Loomis, Corporate Emergency Planning Administrator
*D. Fugere, General Office, Emergency Planner
*R. Orosz, Engineering and Maintenance Manager
*R. Margol, Quality Assurance Administrator
*W. Beckman, Radiological Services Manager
*C. Axtell, Health Physics Superintendent
*L. Kenaga, Staff Health Physicist
*J. Brunet, Plant Emergency Planning Coordinator
*D. Fitzgibbon, Licensing Engineer
*M. Dawson, Emergency Planning Technician
K. Zielinski, Document Control
R. Christie, General Engineer
M. Grogan, Radiological Material Control Supervisor, Shipping
D. Malone, ALARA Coordinator
T. Neal, Radiological Material Control Administrator
R. Curnow, Engineering Technician, Radiological Material Control
R. DeLong, Senior Health Physicist
M. Weber, Corporate Meteorologist
W. Miller, Michigan Department of Public Health, Health Physicist/Emergency Planner
D. Denhof, Corporate Quality Assurance Supervisor
G. Ellis, Radiological Safety Supervisor
M. Mennucci, Radiological Safety Supervisor
D. Stoneberg, Health Physics Technician
E. Kelly, Chemistry Technician
M. Sullivan, Chemistry Technician
D. Badley, Chemistry Technician
J. Hanson, Shift Engineer
B. Bauer, Shift Engineer
M. Genrich, Shift Engineer
R. Massa, Shift Supervisor
M. King, Shift Engineer
B. Dusterhoft, Shift Engineer
T. Anderson, Shift Supervisor
B. Benson, Shift Supervisor
G. Pothoff, Shift Supervisor
S. Wawro, Shift Supervisor
S. Ghidotti, Shift Supervisor

2. Licensee Actions on Previously - Identified Items Related to Emergency Preparedness

a. (Closed) Open Item No. 255/85016-005: This item concerns the need for more space in the EOF for the NRC, FEMA and other participants plus additional telephones for use in future joint exercise or real

events to meet NUREG-0696 guidelines. An inspector determined that five telephones in the adjoining Manor House area and three telephone lines for the conference room adjoining the work area are now installed, labeled and operable. Also telephones in the EOF proper are now labeled. With the added space in the Manor House for Federal agencies plus the additional telephones now operable, this item is closed. (Weakness No. 5 from 1985 exercise)

b. (Closed) Open Item No. 255/85033-05: This item is Issue 8 of 16 issues identified by the licensee as corrective actions to improve the emergency preparedness program and correct the identified weakness from the 1985 exercise. It concerns cubicles in the TSC which inhibit communications and traffic flow. A final decision was reached in March 1986 by plant management not to change the present cubicle office layout. To improve internal communications within the TSC, the licensee intends to install, before PALEX-86, an internal sound-powered phone system for direct voice contact to areas in the TSC which are remote to the Site Emergency Director's (SED) table. This item is closed.

c. (Closed) Open Item No. 255/85033-07 and 08: These two items relate to Issues 14 and 15 and concern trending, assessing, and determining radiological field data and dose rates. Successful completion of the joint TSC/EOF drill on May 14, 1986 corrected these issues to the extent possible without participation in the full scale exercise scheduled for August 19, 1986. As observed by the NRC inspection team, the licensee demonstrated the capability to assess the magnitude, location and composition of the plume using revised dose assessment procedures in conjunction with a new IBM PC computer. Good coordination and agreement with the State of Michigan representative on PARs and dose assessment values was demonstrated. Communications between the TSC, EOF and a communicator in the Operational Support Center (OSC) to receive calls from the TSC and EOF added to the realism of the drill; although the OSC and Material Support Center (MSC) were not activated. All participants displayed a good positive and cooperative attitude. Command and control in both the TSC and EOF was very good. These two issues are considered closed to the extent that the licensee has adequately completed the corrective actions stipulated in the September 20, 1985 meeting.

3. Activation of the Site Emergency Plan

The inspectors reviewed and evaluated six activations of the Site Emergency Plan (SEP) that occurred between February 27 and May 14, 1986. The activations were all correctly classified as Notices of Unusual Events (NUEs), and each was based on the proper Emergency Action Level (EAL). Required notifications were made to the State of Michigan, Counties and the NRC within the required times.

Two of the four documents for the May 2, 1986 event declared at 0217 did not contain the correct declaration time. Also the time and date of the event on the Emergency Notification Form in Procedure EI-3, were left

blank. Those completing these Notifications and Event Report Forms should ensure that the correct time is recorded for event declaration. A followup should be made later to assure consistency with the Shift Supervisor's log as well.

4. Status of Corrective Actions Initiated to Improve the Emergency Preparedness Program Including Responses to Emergency Exercise Weaknesses as Identified in Report No. 50-255/85016 from the PALEX-85 Exercise

The inspectors reviewed and evaluated the current status of the corrective actions still remaining from the original 16 Issues. Issues 1, 3, 4, 5, 10, 11 and 12 remain open because they either require a satisfactory demonstration in PALEX-86 or relate to other future time tables for drills and various training sessions. As previously addressed in Sections 2b and 2c, Issues 8, 14 and 15 are closed. Nine of the 16 Issues listed as corrective actions are now closed.

5. Emergency Detection and Classification (82201)

The inspector reviewed the SEP and the Emergency Plan Implementing Procedures (EPIPs) to determine that the EALs were consistent in both documents and also consistent with NUREG-0654 guidance. For the Fission Product Barriers/Fuel Damage Category of EALs, (Procedure EI-1), it is recommended that more specific guidance for loss of containment be included as part of the EAL; specifically containment pressure and hydrogen concentration.

Ability to recognize and use an EAL, classify the emergency, and make all notifications on a timely basis was demonstrated satisfactorily by the SE/Shift Supervisor (SS) teams representing each of the five shifts. Ten Control Room personnel were included in five separate interviews/ walkthroughs. Technical specifications, normal procedures, and abnormal operating procedures were properly used by the five teams to refer them to the EPIPs and EALs. Also the inspector observed that all correctly used the Emergency Notification Form, Attachment 1 in Procedure EI-2.1 including the 15 minute update above the NUE level.

The inspector confirmed that the annual review of the licensee's EALs was made and discussed with State and County representatives in a meeting held on June 19, 1985. Protective Action Guidelines were also discussed by licensee training representatives. This complies with the requirements of 10 CFR Part 50, Appendix E, Section IV.B.

Based on the above findings, this portion of the licensee's program is acceptable; however, the following item should be considered for improvement:

- For EALs in Fission Product Barriers/Fuel Damage Category (Procedure EI-1) consider more specific guidance to recognize loss of containment, e.g., containment pressure and hydrogen concentration.

6. Protective Action Decisionmaking (82202)

Interviews and walkthroughs with the five sets of SE/SSs confirmed to the inspector that all understood their authorities and responsibilities with respect to accident assessment and protective action decisionmaking. The SEs were aware that a PAR shall be made at a General Emergency whether or not an actual release of radioactivity occurred. The inspector's review of the Security Category of EALs and the PAR flow chart in Attachment 1 of EI 6.13, Protective Action Recommendations for Offsite Population, Revision 3, noted that there was no PAR listed for Security Threats at the General Emergency level. NUREG-0654, Appendix 1, Page 1-17 recommends as an initiating condition that the licensee consider a two mile precautionary evacuation.

Procedure IE-2.1, Attachment 1, was used in the scenario conditions to determine that the SE/SS knew how and when to contact offsite officials. One offsite response official was actually contacted as would be required. All five teams were aware of evacuation time studies and demonstrated that they could use them if required. Also, each SE was able to demonstrate how to make an initial dose assessment using the revised procedures and the IBM-PC computer. Overall, the licensee's staff performed well in these walkthroughs and demonstrated competence to perform their specified emergency response functions.

Implementation of onsite and offsite protective measures including PARs for State and Counties, were aptly demonstrated in the TSC/EOF drill observed by the inspection team on May 14, 1986.

Based on the above findings, this portion of the licensee's program is acceptable; however the following item should be considered for improvement:

- A protective action recommendation to consider a two mile precautionary evacuation for a General Emergency based on a security-related EAL should be included in the PAR flow chart of Procedure EI-6.13.

7. Notifications and Communications (82203)

The inspectors reviewed the licensee's notification procedures and determined that they were consistent with the emergency classification and EAL descriptions in Procedure EI-1. After the initial notifications from the Control Room, subsequent notifications at the Alert level or above are made from the TSC until the EOF is activated and staffed sufficiently to take over this function. Procedure EI-3, Communications and Notifications, Revision 9, now includes in Section 4.4, a statement that the Plant Licensing Technical Engineer shall forward copies of the Emergency Notification Form and two internal documents including the Event Report to the Emergency Planning Coordinator (EPC) and Palisades Document Control. This procedure change allows the EPC to evaluate the complete records of any SEP activation in a timely manner and provide guidance or clarification to Control Room personnel or others on the emergency planning significance of the event. Message authentication is adequately described in Section 4.3.2 of this procedure.

A new computerized printout notification form, which will be used after the initial emergency information is obtained, was used in the May 14 TSC/EOF Drill. The form proved quite helpful for dose rates and other key information. Drill participants in the TSC and EOF commented that the form was quite useful as a communications and information source and was easily readable. State and County telephone numbers were verified as listed in Procedure EI-2.1 and EI-3. The content of the initial messages to offsite authorities in the six activations of the SEP was satisfactory.

The offsite siren notification system consists of 84 sirens, all of them with voice capability. Maintenance of the system is continuing on a quarterly basis. All sirens are sound tested monthly. One act of vandalism partially disabled one siren, but it was repaired without undue delay by a maintenance contractor.

Communication equipment in the TSC, EOF and OSC was determined to be operable. Control Room phone systems were tested separately in the walkthroughs conducted by the inspectors and were found to be operable. All internal phones onsite now include a battery backup in case normal phone power is lost. Additional commercial lines have been installed which connect to separate diesel generators to lessen the impact if one diesel generator is not functional.

Based on the above findings, this portion of the licensee's program is acceptable.

8. Changes to the Emergency Preparedness Program (82204)

The inspection determined that the document control system for changes and revisions was unchanged from the previously reviewed system of controls which include a computer system based at the Corporate Office in Jackson, Michigan. Included in the system are transmittal sheet audit trails and an annual List of Effective Page verifications. Each section in the SEP and EIP is issued or revised separately and preceded by its own cover page bearing the signed review and approval by licensee management to show compliance with 10 CFR 50.54(q). Administrative Procedure 10.41 and 10.42 have complete descriptions of the internal review process which include specific responsibility for reviews to determine change/revision impact on the emergency preparedness program. A spot-check of two sets of EIPs (one assigned to the OSC and one to the emergency preparedness group) and one SEP manual indicated that each was complete and up to date. However, the spot-check determined that line number seven on the Revision and Approval Summary page at the front of each section shows an Annual review requirement in some cases and Biennual review in others.

A previous inspection noted that the Summary page should be changed from Biennual to Annual because an Annual review was required and has been done as verified by the inspector. The change is not being accomplished in a consistent manner as shown by SEP 2 which was reviewed on January 16,

1986 and changed to Annual while SEPs 8 and 9 were reviewed on February 10, 1986 and still list the review cycle as Biennual. The licensee should complete the Biennual to Annual corrections on the SEP and EIP Summary changes.

There have been no major changes to the emergency response facilities, equipment, instrumentation or organization within the last year. Minor improvements have been adequately reflected in Emergency Preparedness training and procedures. A significant improvement in emergency response capabilities is the new computer program for dose assessments. This improvement was reflected in procedure changes and training programs and is discussed in Section 10.

Based on the above findings and interviews with licensee personnel, this portion of the licensee's emergency preparedness program is acceptable. However, the following item should be considered for improvement:

- Correct SEPs and EIPs summary pages as necessary to show the correct review frequency.

9. Shift Staffing and Augmentation (82205)

There has been no change in the licensee's minimum shift staffing complement from the prior review in March 1985 (Inspection Report No. 50-255/85007). Eleven additional emergency response personnel will be available for duty in 30 minutes and 15 more within 60 minutes as stated in Figure 5.4 of the SEP. Five shift augmentation telephone drills were conducted between November 14, 1985 and April 30, 1986. The inspector's review of internal correspondence and interviews with the EPC determined that the first drill and portions of three of the following drills were unsuccessful in meeting time goals for all emergency positions.

The November 14, 1985 call-in drill was able to contact only four Health Physics (HP) technicians out of the 14 SEP qualified HP technicians. Minimum shift augmentation calls for six HP technicians to be available in 30 minutes and six more in 60 minutes. The EPC issued an internal Deviation Report to determine the cause and what followup corrective actions should be taken. This report was reviewed by the Plant Review Committee (PRC) and the Corrective Action Review Board (CARB). Also to get assistance on how to solve the problem, an Institute of Nuclear Power Operations (INPO) telephone network was used to learn how other nuclear power plants in the midwest were meeting the 30 and 60 minute response time goals. Corrective actions proposed and implemented by the site emergency planing group included SEP training for all available HP technicians plus SEP training for Chemistry technicians to enable them to perform emergency HP functions. When this was done the new names were added to the augmentation call-out list. A drill was held on January 27, 1986 and the necessary number of HP technicians responded. The Deviation Report required that an additional drill be held before

March 15, 1986 and this drill resulted in all categories of emergency response personnel responding to meet the goals except the HP technicians (six responded, 13 required). The Security personnel assigned to make the calls failed to call 11 people on the list. Another augmentation drill for HP technicians only was successfully conducted on March 17, 1986.

Another drill since then failed to contact either of the two qualified, SEP trained Electrical Engineers. More staff in that category are now in training. After discussing the problem with the EPC and his supervisors, the inspector suggested that the whole shift augmentation program be evaluated while assuring that enough qualified SEP trained individuals were added to the list for all response positions. The emergency planning group quickly took action to correct the shift augmentation problem, but the rather erratic performance of consecutive drills indicates more evaluation of the problem and corrective action is needed. This should include better communication and coordination with the Property Protection Supervisor and the Security Shift Leader to better coordinate the conduct of these shift augmentation drills. Also a review should be made of the distances from the plant of the 30 and 60 minute response people. If the primary contact can't meet the goal, a switch between 30 minute and 60 minute response time personnel, or vice versa from a 60 to a 30 minute response goal might improve augmentation. A more efficient way of initiating the telephone calls or use of a private answering service should be considered. Until more reliability is established through successful shift augmentation drills, this shift staffing and augmentation issue will be considered an open item, (Open Item No. 50-255/86015-01).

10. Dose Calculation and Assessment (82207)

The inspector reviewed Dose Assessment Procedure EI-6.0, Offsite Dose Calculation and Recommendations for Protective Actions, and related Procedures EI-6.0 through 6.13. Plant conditions are specified for both the short and long method of calculating dose assessments values. For the short form (EI-6.0) the release must be through the stack or steam dump and the main steam gamma monitors must be operational depending on the release path. This method was used by the Control Room staff under the SE to make an initial offsite dose calculation of PAR when required. As indicated in Section 6, all five of the SE/SS teams could make this initial determination. Five distinct release rate calculation methods are enumerated in EI-6.0, each related to various plant release paths. The conditions and options for the Offsite Main Dose Assessment Menu are clearly indicated to the user. Also a reference is included to Procedure EI-6.13 which is used to determine recommendations for offsite protective actions. The inspector concluded that all Procedures EI-6.0 through EI-6.13, were well written and easy to follow. They facilitated rapid dose assessment when such was required and allowed a more detailed assessment at a later time.

The inspector discussed the dose projection models used by the licensee and by the State of Michigan with representatives of both parties. The two models were compatible and no major differences were noted.

An inspection and operability check was made of computer terminals and support items used for dose assessment in the TSC and EOF. One noticeable flaw was identified which related to the use of the option which calculates release rates from steam line monitors for steam releases through the atmospheric dump valve. If abnormally low reactor temperatures were entered, zero or negative release rates were generated.

The inspector conducted dose assessment walkthroughs with four individuals who would be responsible for dose assessment during an emergency. All were able to make the calculations when given the parameters by the inspector. One of the four was only marginally familiar with the operation of the computer terminal used for dose calculations. Training records were reviewed for all those assigned dose assessment responsibilities as part of their emergency response functions, and the inspector determined that all on the eligible list had been trained as required. It was suggested that those who do not routinely use personal computers should receive more frequent computer use training.

Based on the above findings, this portion of the licensee's program is acceptable.

11. Licensee Audits (82210)

The independent review of the licensee's emergency preparedness program was accomplished within the 12 month time requirement as stipulated in 10 CFR 50.54(t). Part of this review was an initial independent review and evaluation of the August 1985 annual emergency exercise by representatives of another licensee's emergency preparedness group. Consumers Power has a mutual agreement with this utility that each will observe and evaluate aspects of the others EP programs through an evaluation of the annual exercise. The balance of the independent review was made by the licensee's Quality Assurance (QA) Department. One was conducted from September 23-27, 1985, and the other was made from February 10-14, 1986 of the General Office Corporate Emergency Planning Group. Through discussions with both corporate and site EP representatives and a review of the observations made from these independent reviews, the inspector concluded that areas of concern were being addressed by EP and changes made where warranted.

The significant items in the two QA audits were categorized as findings or observations, with findings being more significant. Only the September 1985 QA audit had an EP finding, the rest were observations. The finding was that the Corporate Emergency Planner shall review all Palisades implementing procedures. One observation recommended that the Nuclear Operations Department (NOD) Procedure NODS-A07 be revised so that only the PRC does the review of all emergency implementing procedures and revisions. Both recommendations have been followed. Thus, the Palisades and the GORT/EOF implementing procedures will now have distinct and separate review groups.

The independent review and evaluation of the August 1985 exercise included an evaluation of the adequacy of the licensee's interface with State and local governments. Although this was not a full scale exercise there were communication links maintained with the State and through them with the counties. Areas evaluated included notifications, assessment actions, EOF functions, Joint Public Information Center (JPIC) and offsite radiological monitoring. This evaluation was considered adequate and that portion of the evaluation was available to State and local governments for their consideration.

The inspector confirmed that the licensee has conducted critiques following practice drills as well as the annual emergency exercise and has a program to provide corrective actions for those weaknesses identified and where applicable include the recommendations to EP training. Audit findings and recommendations have been presented to management for their review.

Based on the above findings, this portion of the licensee's program is acceptable, however, the following item which was one of three submitted in the December 1984 Inspection Report No. 84-29, as an improvement item still applies. Effort should be made by the licensee to address these areas for the 1986 independent review by QA:

- The next emergency plan revision should contain additional descriptive information regarding the scope of emergency preparedness audits, where audit records are maintained, and how appropriate State and local organizations can have access to portions of audits dealing with the plant's interface with State and local support organizations.

12. Maintenance of Emergency Preparedness

The inspector determined that the required annual radiological monitoring drill and the semiannual health physics drills have been conducted by the licensee. Several additional offsite radiation monitoring drills involving plume tracking, iodine and particulate sampling, and direct radiation measurements have been conducted as practice drills for PALEX-86. The annual medical drill of November 7, 1985 had a weakness identified regarding in adequate security guidance for the Covert, Michigan ambulance from the entrance gate of the plant area to the location of the "victim." This item, as evaluated by the inspector, included lack of coordination between the plant first-aid team and the security officer assigned to the ambulance. Steps have been made to preclude a recurrence of this action.

Records of required communication checks for telephone, radios and other communications checks were satisfactory. Also several telephones were checked for operability in the TSC, OSC and EOF. Records of inventory kits were checked and found to be satisfactory. Kit No. 2 in the OSC was physically inventoried by the inspector and all items identified.

Shift augmentation drills have been addressed in Section 9. As part of maintenance of EP interviews were conducted with three OSC Radiation Protection Supervisors, three Chemistry technicians and one HP technician. All performed satisfactorily and were cognizant of their emergency response functions. An inconsistency in two EPIPs was noted by the inspector when interviewing those qualified for the OSC Radiation Protection Supervisor position. Procedure EI-7.1, Post Accident Sampling, uses 0.8 stay time adjustment factors for radiation exposure calculations. Procedure EI-8, Onsite Radiological Monitoring, uses 0.9 for the factor relating to stay time. The difference in stay time calculations could result in a procedure violation.

Based on the above findings, this portion of the licensee's program is acceptable; however the following item should be considered for improvement:

- Evaluate the stay time adjustment factor as listed in Procedure EI-7.1, EI-8, and other procedures or guides so that the numerical values will be consistent for stay time calculations. (Open Item No. 255/86015-02)

13. Exit Interview

The inspectors held an exit interview on May 16, 1986 with those licensee representatives denoted in Section 1 of this report. The inspectors determined from the licensee that none of the information discussed was proprietary in nature. The Lead Inspector discussed the scope and findings of this inspection including the current status of corrective actions taken to improve the licensee's EP program. The Lead Inspector and the Branch Chief from Region III concluded that continued improvement in the EP program has been made since the August, 1985 emergency exercise.