PALISADES Evaluation Period: 9/1/79 - 9/1/80

I GENERAL

The principal reason for the "below average" rating of this licensee during the SALP-1 appraisal period was "human error," and "failure to adhere to procedure" (see Contentions A and B for details). As the result of an NRC Order, the licensee initiated a comprehensive program to improve their regulatory performance in these areas. However, subsequent to the SALP-1 appraisal period the licensee was involved in a Level III violation involving human error and failure to adhere to procedure. This event which occurred on January 6, 1981, resulted in both 125 volt D.C. output breakers being mis-positioned to the open position during reactor operation. The consequences of this, assuming a reactor trip and loss of offsite power would be that there would be no automatic source of emergency power available for plant cooldown. As a result of this event the NRC issued an Immediate Action Letter (IAL) and a Confirmatory Order.

NRC Order 11/9/79

LER 50-255/81-01

IAL 1/9/81
Confirmatory Orc 3/9/81

Since the SALP-1 appraisal period and as a result of the Confirmatory Order, the licensee has strengthened their program to improve their regulatory performance. A key factor in this program was the contracting of a management consultant firm to evaluate the company and plant organizational structure and management systems. The major findings and recommendations of this consultant resulted in a significant company and plant management reorganization which was placed in effect on July 1, 1981. Each of the areas of concern identified in the SALP-1 Evaluation and in the Confirmatory Order was addressed in this reorganization. The areas addressed include:

- A daily audit of plant operations by a corporate management representative.
- All Technical Specification surveillance procedures were reviewed by a select team of reviewers to assure adequacy prior to use.
- All personnel performing work in vital areas reinstructed in necessity for strict adherence to procedure.
- Double verification of safety related system alignments.
- Review of circuitry involved in the January 6, 1981 battery output breaker event with intent to modify to prevent recurrence.
- Limiting overtime hours worked by licensed operators.

- Corporate review of safety related events.
- Contracting a management consultant firm.
- Additional review of safety related procedures and the procedure preparation process.
- Review, evaluate and modify, as necessary, the training and retraining of personnel.
- Review and evaluate the adequacy of the plant operations staff.
- Establish measures to motivate personnel adherence to procedure.
- Develop a system of audits by management to assure conformance to procedure.

During the latter portion of the SALP-1 appraisal period the licensee addressed the problem of inadequate procedure, and failure to adhere to procedure by the formation of a company wide 37 man task force whose charter included:

- Physical "walk down" verification of each component in each safety related system; upgrading the plant piping and instrumentation drawings; upgrading the system line up check lists and procedures; double verification of procedural adequacy.
- Retraining of all licensed operators on the necessity for strict attention and adherence to procedure.

During the latter portions of the SALP-1 appraisal period the licensee took the following actions to reduce the incidence of "Human Error:"

- Formally reinstructed all personnel on the requirement for strict attention and adherence to procedure.
- Assigned permanent Shift Technical Advisors to each shift and provided a two hour overlap of this coverage on shift change.
- Initiated a "double verification" of all safety related system manipulations by designated qualified personnel.
- Increased the shift turn over status check list verification coverage.
- Strengthened and re-emphasized the company policy on disciplinary action for poor performance.

II SPECIFIC (Contentions A through H below are examples of the more general contention, "The Palisades facility displayed evidence of weaknesses in the areas of plant operations, surveillance, and radiation protection.")

A. Contention:

"Performance in the area of plant operations was characterized by personnel errors and failure to follow procedures."

1. Basis

There were several instances of personnel error in the operation of plant equipment during the conduct of plant surveillance activities. Examples include the mispositioning of Emergency Core Cooling System System (ECCS) supply valves on two separate occassions. In both instances the operability of one train of the ECCS was degraded during reactor operation.

LER 80-021
LER 80-029
IAL 7-31-80
IE Inspection Report No. 50-255/80-12

Notice of Violation to Licensed Operator 50-255/80-12

In two instances, failure by the licensee to follow procedure resulted in violation of Technical Specification limiting conditions for operation. The first event, which resulted in a prolonged (18 month) breach of containment integrity, was primarily due to procedure inadequacy, but was strongly contributed to by failure to adhere to work control and administrative procedures. In the second instance a surveillance procedure was performed during power operation when the procedure specifically called for the testing to be done only during cold shutdown condition. Performing the test during power operation placed one train of the ECCS in a degraded mode.

IE Inspection Reports 79-15; 80-12; 79-24
LER 79-037; 80-029

2. NRC Actions

Following the breach of containment integrity event of September 11, 1979 the following actions were taken:

. Verification of licensee's immediate actions to close the valves and correct the check lists.	9-14-79
. Issued Preliminary Notification	9-14-79
. Issued Potential Abnormal Occurrence Report	9-18-79
. Issued Inspection Report	10-12-79
. Enforcement Meeting with licensee at the Office of the Director NRC.	11-30-79
. Issued order modifying plant license.	11-09-79

- Issued proposed Civil Penalty of $450,000.00 (in ajudication)...settled on 6/30/81 at $225,000.00. — 11-09-79

- Initiated an augmented inspection program to verify that the order requirements were satisfactorily completed. — thru January, 1981

Following the ECCS valve mispositioning events of July 25, 1980, and August 19, 1980, the following actions were taken by the NRC:

- Verified licensee's immediate corrective actions-specialists dispatched to site.

- Issued Preliminary Notifications PNO-III-80-140A, and PNO-III-80-155.

- Issued Immediate Action Letter. — 7-31-80

- Issued citations and civil penalty ($16,000.00). — 9-16-80

- Issued Notice of Violation letters to licensed operators. — 9-16-80

- Conducted public meeting at South Haven, Michigan. — 12-17-80

- Performed independant analysis of consequences including review by NRR. — August 1980

- Issued Potential Abnormal Occurrence Report — August 1980

- Reviewing and revising the inputs to the control room sequence of events recorder with the objective of removing as many non-safety related signals as possible and assuring that the required safety related inputs are present.

- Assuring that the sequence event recorder data sheets are reviewed at least daily, by a cognizant person not directly involved in the operations to determine if any unexplained or abnormal conditions are indicated.

- Investigating the possibility of providing a key lock position switch for each of the containment sump recirculation supply valves.

3. Licensee Corrective Actions

Following the September 11, 1979 breach of containment integrity violation, the following actions were taken by the licensee:

- Unlocked and closed the valves. Began an investigation.

- Began an evaluation of consequences.

- All safety related systems were subjected to a "walkdown" verfiication to assure that the plant piping and instrument diagrams (P&ID's) were correct.

- Plant master valve and system line-up lists were checked against these P&ID's to assure their completeness.

- Plant procedures were checked against the P&ID's and the line-up check lists to assure their completeness and adequacy.

- Technical advisors were permanently assigned to each shift.

Following the ECCS valve mispositioning events of July 25, 1980, and August 19, 1980, the following actions were taken by the licensee:

- The immediate action taken by the licensee was to correctly reposition the valves and begin an investigation to determine how and when the valves were mispositioned, and to determine the safety consequences of each event. Once the above had been determined, the following actions were taken immediately by the licensee:

- Suspended the Shift Supervisor involved in the August 19, 1980 event from licensed duty.

- Retraining of licensed personnel regarding strict attention and adherence to procedure.

- Upgrading of the shift turnover check list to include the valves in question and similar valves that may not have been on the check list.

- Changing the shift schedule for the shift technical advisors such that these individuals have at least a two hour overlap.

- Installing colored markers (dots) on the panel boards adjacent to the valve position indicator lights on all safety related valves. The normal line up being indicated when the marker dot is aligned with a lighted position indicator.

B. Contention

"Repetitive instances of system misalignments impaired ECCS equipment operability and containment integrity."

1. Basis

Major examples are the same as identified in Contention A.

2. NRC Actions

Major examples are the same as identified in Contention A.

3. Licensee Corrective Actions

Major examples are the same as identified in Contention A.

C. Contention

"The licensee had numerous problems with defective plant operating procedures."

1. Basis

A major example of procedural inadequacy is also identified in contention "A", the September 11, 1979 Breach of Containment Integrity. In this event the mispositioned valves were not identified in any procedure nor were they listed on any system valve line-up check list.

IE Inspection Report 79-15
LER 79-037

2. NRC Actions

Same as identified in Contention A.

3. Licensee Corrective Actions

Same as first six items under Licensee Corrective Actions for Contention A.

D. Contention

There were instances where the licensee had difficulty in completing adequate corrective action for identified discrepancies."

1. Basis

The major examples are the same as identified in Contention A.

2. NRC Actions

Same as Contention A.

3. Licensee Corrective Actions

Same as Contention A.

E. Contention

"Weaknesses in the surveillance area were characterized by instances of defective procedures and personnel errors."

1. Basis

Same as Contention A.

2. NRC Actions

Same as Contention A.

3. Licensee Corrective Actions

Same as Contention A.

F. Contention

"In the radiation protection area, there were items of noncompliance regarding....inadequate controls over release of radioactive material. In addition, the health physics appraisal team inspection found Palisades radiation protection programs to be below average. There were weaknesses in training and staffing, exposure control, procedure and QA program implementation, and instrument availability."

1. Basis

A Health Physics Appraisal was conducted at the Palisades site on August 4-15, 1980. The significant appraisal findings included the following:

IE Health Physics Appraisal Team Appraisal Report 50-255/80-14

. Staffing

A documented chemistry and radiation protection qualification program is needed to ensure that personnel are properly assigned work responsibilities. Shift coverage must be adequate to ensure that necessary samples and measurements can be taken in accident situations to promptly evaluate radiation hazards and effect appropriate radiation precautions.

. Training

The training program requires significant improvement in terms of actual training provided and documentation of training needs and progress.

. Instrumentation Availability

The instrumentation program needs upgrading to ensure adequate beta measurements, operable survey instruments, calibrated high range survey instruments, an adequate supply of CAM's to evaluate changes in airborne radioactive concentrations, and effective monitoring of personal contamination.

. Personnel Exposure

The ALARA program requires significant improvement, including: formalized structure and guidance, job specific dose records and evaluation, and development of specific goals.

- Inadequate Controls

  Airborne effluent controls require improved quantification of gaseous releases, using both the normal and high range stack monitors, including: operating procedures, training, record clarity, monitor energy response, and readout availability.

- Procedureal Implementation

  Procedural coverage and adherence need upgrading to include activities not presently addressed and to resolve inconsistencies between procedures and actual practices.

- QA Program Implementation

  The quality assurance program needs to be upgraded in the areas of deviation reporting and effectiveness of corrective actions.

2. NRC Action

The items of concern listed above plus items identified during the SALP Review (9/1/79 to 9/1/80) were formally discussed with licensee management. Remedial actions for the more serious shortcomings regarding the high range noble gas monitors identified in the HP Appraisal inspection were addressed in an Immediate Action Letter. A written response was required for items of lesser concern. Licensee corrective actions are under review by the NRC. The activities in many of the above areas are routinely observed and reviewed by the site resident inspectors, and all are periodically reviewed by specialists from the Region III office.

IAL - 8/15/80
IE Inspection Report 50-255/80-23
Responses:
R. C. Youngdahl to J. G. Keppler; 12/23/80.
Response:
J. G. Keppler to R. B. DeWitt; 1/26/81.

3. Licensee Corrective Actions

A company wide re-organization was placed into effect on July 1, 1981. Included in this re-organization was the identification of a new Director of Radiological Services, and a program identifying authorities and responsibilities in the following areas:

- OCCUPATIONAL EXPOSURE
- DOSIMETRY PROCESSING
- DOSE ANALYSIS
- EMERGENCY PLANNING
- RADIOACTIVE MATERIAL TRANSPORTATION AND CONTROL

. NUCLEAR PUBLIC AFFAIRS
. NUCLEAR LEGISLATION

Corporate and plant radiation protection plans were developed and implemented recently. Additionally, the training department has been expanded, and specifically includes training and retraining for the chemical and health physics personnel.

Health Physics Management personnel changes made during the SALP period are expected to result in improved licensee performance.

G. Contention

"In the radiation protection area, there were items of noncompliance regarding personnel overexposure."

1. Basis

In October of 1979 an 18 year old received a quarterly exposure in excess of the allowable for an 18 year old. (1.7 rems vs 1.25 rems) — IE Inspection Report 79-15

2. NRC Actions

The licensee was cited for failure to adhere to 10 CFR 20.101(a). The matter was discussed with licensee management. — IE Inspection Report 79-15

3. Licensee Corrective Actions

The licensee reviewed the applicable CFR and found that they had misinterpreted the intent.

H. Contention

"Escalated enforcement action was taken on several occasions."

1. Basis

During and following the SALP-1 appraisal period, escalated enforcement actions were deemed necessary to communicate the increasing NRC concern with the licensee's regulatory performance.

2. NRC Actions

Escalated enforcement actions which were taken, include:

. NRC Order (mispositioned containment valves) — 11/9/79

. Enforcement meeting at Office of Director NRC (mispositioning of cont. isolation valves).	11/30/79
. Civil penalty (mispositioned containment valves).	11/9/79
. Immediate Action Letter (mispositioned ECCS valves).	7/31/80
. Civil penalty (mispositioned ECCS valves).	9/16/80
. Notice of Violation to licensed operator (mispositioned ECCS valves).	9/16/80
. Conducted public meeting in South Haven, Michigan (mispositioned ECCS valves).	12/17/80
. Immediate Action Letter (mispositioned battery breakers).	1/9/81
. Confirmatory Order (mispositioned battery breakers).	3/9/81

3. Licensee Corrective Actions

(See Part I, "GENERAL.")