

Docket Nos. 50-440/441

APR 3 1986

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MEMORANDUM FOR: G. Lainas, AD-TS/DBL  
B. Liaw, EB/DBL  
M. Hodges, RSB/DBL  
G. Hulman, PSB/DBL  
M. Srinivasan, EICSB/DBL  
D. Vassallo, FOB/DBL  
G. Holahan, ORAS/NRR

THRU: Walter R. Butler, Director  
BWR Project Directorate No. 4, DBL

FROM: John J. Stefano, Project Manager  
BWR Project Directorate No. 4, DBL

SUBJECT: DRAFT NRR INPUT FOR PERRY SALP-6 (PERIOD OF JULY 1, 1985  
TO APRIL 30, 1986)

Enclosed is the draft SALP-6 report for the Cleveland Electric Illuminating Company (CEI) Perry Nuclear Power Plant for the subject appraisal period. The report is based on SALP inputs provided by technical review personnel and the assessments made by the Project Manager. The proposed overall performance rating in the functional area of Licensing Activities is Category 1. A summary precedes the enclosed report, which is to be input in the final comprehensive report prepared by Region III.

Please review the report and provide any comments you feel appropriate by noon Monday, April 7, 1986, directly to the Project Manager (x29473).

Original Signed by

John J. Stefano, Project Manager  
BWR Project Directorate No. 4, DBL

Enclosure:  
As stated

cc: w/enclosure  
H.R. Denton  
D.G. Eisenhut  
R.M. Bernero  
R.W. Houston

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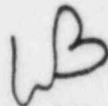


UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

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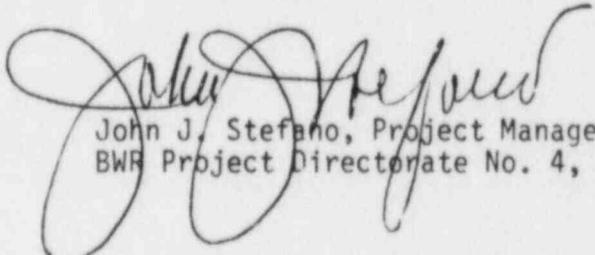
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## Summary - Licensing Activities

### 1. Analysis

Evaluation of the licensee's performance for this rating period was predicated on how the licensee fared in the areas of management involvement and control in assuring quality; how the licensee approached the resolution of technical issues; the licensee's responsiveness to NRC initiatives; and project staffing in the emergency planning, licensing and plant operating organizations.

Weaknesses reported for the last SALP period in the area of the licensee's management involvement and control in assuring quality with respect to plant test and plant operation organizational interfaces, control and overview of FSAR amendments, the oversight of in-house and Architect Engineer engineering work to preclude deficiencies found during the Independent Design Inspection (IDI) Team audit of the licensee's technical documentation file, and the workload problems in the Licensing organization which resulted in missed commitments, have all been corrected to the NRR staff's satisfaction.

With respect to the licensee's approach to resolving technical issues, the licensee was found to be thoroughly competent and understanding of technical issues which needed to be resolved in obtaining an operating license for Perry 1. Performance of the licensee's technical staff was better than average in addressing such difficult SER open issues as: reliability of TDI diesel engines; the detailed control room design review; RCPB leak detection design; Mark III (Humphrey) containment design issues; completion of the fire protection program; use of silicone sealant in HVAC ductwork; post-accident sampling system design; and the completion of plant equipment seismic/dynamic qualifications. It is particularly noted that the work performed by the licensee contributed to making Perry the only Mark III plant to date which has satisfactorily resolved every containment design issue alleged by John Humphrey, a former GE engineer, at the time the initial SER was issued in May 1982: With respect to use of silicone sealant, the licensee was the first to implement a comprehensive testing program to address long-standing generic NRC staff concerns relative to the integrity of silicone sealants used in HVAC ductwork under postulated accident environmental conditions. Resolutions for these issues are documented in SSER Nos. 7, 8, and 9 which were issued during this rating period. Responsiveness to NRC initiatives has been most satisfactory in that the licensee is always ready to meet with the staff (often generating meetings themselves) to ensure a correct response to NRC needs. Examples of this were most evident from the licensee's performance in the resolution of the technical issue discussed above.

### 2. Conclusion

An overall Category 1 rating is assigned for the licensee's performance for this rating period.

The licensee's Staffing was found acceptable for Perry 1 licensing which occurred on March 18, 1986. A full compliment of four shifts of licensed SRO's, RO's and STA's was available to initially operate the plant at the time of licensing, with an additional two shift crews ultimately planned. The NRR staff understands that improvement has been made for the emergency planning coordination function which should strengthen offsite planning interfaces and coordination activities during an emergency situation. NRR expects to confirm this during its witnessing of the next full participation emergency exercise scheduled in April 1986.

3. Board Recommendation

The licensee has recently been issued a low power operating license for Perry 1. Since this is the licensee's first licensed plant and since the licensee has little experience in directly operating a nuclear plant, continued frequent monitoring of the licensee is recommended. The Category 1 rating given is primarily associated with the licensee's pre-licensing performance.

Docket Nos. 50-440/441

FACILITY: Perry Nuclear Power Plant  
LICENSEE: Cleveland Electric Illuminating Company  
EVALUATION PERIOD: July 1, 1985 to April 30, 1986  
FUEL LOAD:  
PERRY 1 March 18, 1986  
PERRY 2 Undetermined  
PROJECT MANAGER: John J. Stefano

## I. INTRODUCTION

This report contains NRR's input to the SALP review for Perry 1/2. The assessment of the licensee's performance was conducted according to NRR Office Letter No. 44, "NRR Inputs to SALP Process", dated January 3, 1984. This Office Letter incorporates NRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance."

## II. SUMMARY

NRC Manual Chapter 0516 specifies that each functional area evaluated will be assigned a performance category (Category 1, 2 or 3) based on a composite of a number of attributes. The performance of the Cleveland Electric Illuminating Company in the functional area of Licensing Activities is rated Category 1. The licensee was rated Category 2 in the area of Licensing Activities during the previous SALP period.

## III. CRITERIA

The evaluation criteria used in this assessment are given in NRC Manual Chapter 0516 Appendix, Table 1, "Evaluation Criteria with Attributes for Assessment of Licensee Performance."

## IV. METHODOLOGY

This evaluation represents the integrated inputs of the Project Manager (PM) and those technical reviewers who expended significant amounts of effort on Perry licensing actions during the rating period. Using the guidelines of NRC Manual Chapter 0516, the PM and each reviewer applied specific evaluation criteria to the relevant licensee performance attributes, as delineated in Chapter 0516, and assigned an overall rating category (1, 2, or 3) to each attribute. The reviewers included this information as a part of each Safety Evaluation Report transmitted to the Division of BWR Licensing. The PM, after reviewing the inputs received from the technical reviewers, combined this information with his own assessment, arrived at a composite rating for the licensee. A written evaluation was then prepared by the PM and circulated to NRR/IE management for comments, which were incorporated in the final draft.

The basis for this appraisal was the licensee's performance in support of the NRC staff's SSER inputs which are documented in SER Supplement Nos. 7, 8, and 9; amendments to the FSAR submitted by the licensee (Amendments 20 to 24); and the licensee's responses to requests for additional information, NRC Generic Letters, etc. (SER Supplement No. 9 documents exclusively the NRC staff's evaluation of the licensee's assessment of the earthquake which occurred near the Perry plant site on January 31, 1986, and the effect of that earthquake on plant structure and equipment design). This appraisal is also based on the licensee's performance in addressing earthquake findings before the Advisory Committee on Reactor Safeguards in February and March 1986, as well as the licensee's action relative to (1) the intervenors motion to admit a new earthquake related contention issue for litigation at hearing, and (2) other contention issues before the ASLAB. The subjects involved included the following licensing and Board issues:

#### SER Licensing Issues

- Control room design review
- Control room habitability
- Fire protection program
- PSI program
- EOP's for transients/accident per TMI I.C.1
- Seismic/dynamic qualification of mech./elect. equipment
- Pump and valve operability per TMI II.D.1
- Mark III (Humphrey) containment design issues
- Reliability of TDI diesel engines
- Silicone sealant used in HVAC ductwork
- Conformance with post-trip review program/procedures (Generic Letter 83-28)
- Core thermal-hydraulic stability analysis
- Post-accident sampling system design per TMI II.B.3
- I&C setpoint methodology-response time testing
- Instrument air system air quality
- Max. Extended Operating Domain analysis for initial startup program

#### Licensing Board Issues

- TDI diesel engine reliability
- Hydrogen control ignition system design for degraded core accidents
- Emergency preparedness
- January 31, 1986 earthquake motions/Board questions

#### V. ASSESSMENT OF PERFORMANCE ATTRIBUTES

The licensee's performance evaluation is based on a consideration of four of the seven attributes specified in NRC Manual Chapter 0516. These are:

- Management Involvement and Control in Assuring Quality
- Approach to Resolution of Technical Issues
- Responsiveness to NRC Initiatives
- Staffing

For the remaining three attributes (Training, Enforcement History, and Reporting and Analysis of Reportable Events), no basis exists for a NRR evaluation for the functional area of Licensing Activities for this appraisal period. However, NRR reserves the option of updating this report to assess and rate the licensee's performance relative to the attribute of Reporting and Analysis of Reportable Events. The licensee was recently issued a low power operating license for Perry Unit 1 (March 18, 1986), which is relatively close to the date (April 7, 1986) that Region III has requested receipt of NRR's input for the SALP-6 report. There may be licensee event reports filed by the licensee through the end of the SALP-6 report period (April 30, 1986) which may require an assessment by the NRR staff.

#### A. MANAGEMENT INVOLVEMENT AND CONTROL IN ASSURING QUALITY

During this review period, the licensee's management demonstrated an active participation and thorough working knowledge of the technical issues involved in licensing activities, and has kept abreast of current and anticipated NRR licensing actions. This was especially evident by actions taken by the licensee's management in directing his staff to ensure that the physical plant was designed and built in conformance with regulatory requirements, and in the finalization of plant Technical Specifications. With respect to the NRC technical concerns over the use of silicone sealants on HVAC ductwork, it is the staff's opinion that the licensee's management enabled its technical personnel to institute a program, unique in the industry, which has the potential for solving this longstanding generic issue. More recently, the licensee's management direction and direct involvement in assessing the effects of the 1986 Ohio earthquake on the plant design, as well as in the re-review of the site area geology/seismology design bases, was instrumental in obtaining the Perry Unit 1 low power operating license in March 1986. Management competence, leadership and direction was visible in the manner in which the VP-Nuclear Operations Group presented the CEI earthquake evaluation findings before the ACRS in February and March 1986.

During the last SALP period, weaknesses were reported by NRR relative to the licensee's performance in managing the documentation of commitments to regulatory guides in the FSAR, the control of plant test and plant operation organizational interfaces, and with design deficiencies uncovered by the NRC Independent Design Inspection Team, believed to be the result of management weaknesses in controlling quality assurance in-house and with the Architect Engineer. On being advised of this, the licensee took prompt remedial action to rectify the weaknesses indicated, instituting controls for more direct senior management oversight of technical programs and actions. This action resulted in the issuance of FSAR amendments which have since satisfied NRR's concern relative to the licensee's commitments with respect to conformance with regulatory guides. Problems

associated with organizational interfaces between plant test and plant operations staff were corrected by the implementation of additional review functions, and the design deficiencies discovered by the IDI Team have been corrected by a more detailed oversight of in-house and Architect Engineers engineering work. Organizational improvements were most evident in the licensee's management and handling of the 1986 Ohio earthquake event.

On the basis of the above discussion, a rating of 1 is assigned to this attribute. The licensee's performance was rated a 2 for this attribute in the last SALP report.

#### B. Approach to Resolution of Technical Issues

The licensee's engineering management staff has continued to demonstrate a sound working knowledge of the technical issues involved with NRR licensing actions during this review period. Their approach to the resolution of SER technical issues, documented in SER Supplement Nos. 7, 8, and 9, is indicative of the licensee's technical staff expertise, and of his effective use of consultant's and the Architect Engineer in the settlement of those issues. Decisions related to licensing issues have consistently and conservatively been exhibited by the licensee's staff, particularly where related to safety-related matters. The licensee's understanding of the NRC concerns assured sound and timely technical discussions with respect to issues related to: (1) the use of silicone sealant on HVAC ductwork; (2) RCPB leak detection and compressed air system designs; (3) resolution of the Mark III (Humphrey) containment design issues; (4) completion of the fire protection program; (5) resolution of the post-accident sampling system design; (6) completion of the seismic/dynamic qualification of mechanical and electrical equipment; and (7) the completion of confirmatory work related to the reliability of the TDI diesel engines.

The licensee's technical staff demonstrated an aggressive attitude by taking the industry lead to develop and implement a comprehensive testing program to address longstanding generic NRC concerns relative to the use and long-term integrity of silicone sealants in HVAC systems under postulated accident environments. The detailed information furnished to the NRR staff regarding the plant's RCPB leak detection design was of such completeness as to enable an expeditious and timely review by the NRR staff, and precluded the need for generating additional information requests. Perry is the only Mark III plant to date which has satisfactorily resolved every containment design issue raised by John Humphrey, a former GE engineer. This is the result of the licensee's effort in providing detailed and complete information needed to resolve those issues. The timely completion of the seismic/dynamic qualification of plant equipment precluded the need for processing exceptions to certain required completion dates. The completion of TDI diesel engine design confirmatory items and the resolution of post-accident sampling system design issues, displayed a thorough understanding of regulatory requirements and staff technical positions, and exhibited the capability and competence of the licensee's technical staff.

Of additional note is the completeness with which the licensee analyzed the effect of the January 1986 Ohio earthquake on the plant design. This effort further demonstrated the licensee's command of the technical facts related to the plant seismic design, the judicious use of his technical consultants, and in his technical competence in presenting earthquake findings before the ACRS Subcommittee and Full Committee in February and March 1986.

Finally, the licensee's efforts in finalizing plant Technical Specifications was most commendable. As a result of those efforts, comments received from the NRR and regional inspection staff were less significant than those experienced with other similarly designed plants. The licensee was most receptive to NRR guidance in the development of the plant Technical Specifications, and was promptly responsive to the iterative process involved.

No significant negative experiences were evident with the licensee's performance during this appraisal period.

In view of the above findings, a rating of 1 is assigned this attribute. The licensee's performance was rated a 2 during the prior appraisal period.

#### C. Responsiveness to NRC Initiatives

The licensee has been generally responsive to NRC initiatives during this appraisal period. During this period, the licensee made great strides to meet established commitments in response to TMI Action items, SER open issues, requests for additional information, and in responding to NRC generic letters. Problems in meeting commitments experienced during the latter parts of the last appraisal period, have been resolved to the point where the licensee's past track record of meeting such commitments have been restored. We expect to see this positive trend continue during plant operation.

Based on this finding, a rating of 1 is assigned to this attribute. The licensee was also rated 1 during the last appraisal period for this attribute.

#### D. Staffing

NRR's appraisal of this attribute is primarily based on efforts made by the licensee in the training and preparedness of reactor operators and technical advisors in the formation of shift crews in readiness of Perry Unit 1 licensing.

At the time of plant licensing, the licensee advised that four operating shift crews were available to operate Perry Unit 1, with plans to have a sufficient number of licensed SRO's, RO's, and STA's for six operating shifts. The licensee's plant operation organization was found acceptable by the NRR staff for the licensing of Unit 1 in December 1985, and documented as such in SSER No. 8. It is the licensee's plan to have every General Engineering Supervisor (GSE) licensed as SRO's as a matter of CEI policy. Many of the GSE positions are already filled by personnel possessing SRO certificates.

In the last SALP, NRR reported that the Emergency Planning coordinator, and group responsible for offsite emergency planning, required clarification and strengthening. We understand that this has been accomplished and that we can expect to witness the improvements made in this regard during the next full participation emergency exercise scheduled in April 1986.

In the last SALP, the licensee's Licensing organization was found lacking in sufficient staff to be completely responsive to NRR's information needs and that this was reflected in the licensee's failure to meet his commitments to the NRR staff. The Licensing organization has since been reorganized and staffed and is no longer of concern of NRR. Since the last SALP report was issued, the licensee has made good progress in meeting his commitments to NRR.

Based on the above, a rating of 1 is assigned to this attribute. The licensee's performance was rated a 2 for this attribute during the last appraisal period.

#### VI. Conclusion

An overall rating of Category 1 has been given for the functional area of Licensing Activities on the basis of this NRR-SALP report.

#### VII. Other Functional Areas

##### A. Containment Safety-Related Structures

NRR finds that FSAR amendments issued by the licensee since the last SALP period have acceptably resolved questions previously raised with respect to the licensee's conformance with the Regulatory Guides.

##### B. Preoperational Testing

NRR finds that FSAR amendments issued by the licensee since the last SALP period adequately correct problems in defining and documenting preoperational test programs, objectives, and procedures.

INFORMATION TO BE ADDED

TO

SALP-6 REPORT "SUPPORTING DATA" SECTION

1. Significant Correspondence/Meetings

- July 19, 1985 - CEI issued FSAR Amendment 20
- September 20, 1985 - NRC accepts CEI schedule for meeting the Hydrogen Control Rule - 10 CFR 50.44(3)(c)(vii)(A)
- October 4, 1985 - CEI issued FSAR Amendment 21
- October 29, 1985 - CEI requested extension of CPPR-148 to 12/31/85
- October 31, 1985 - NRC submitted the draft low power operating license for Perry 1 to CEI for comment
- November 12, 1985 - NRC Management visit to Perry plant site to discuss readiness for licensing
- November 19, 1985 - NRC issued final draft of Perry 1 Technical Specifications for CEI certification
- November 20, 1985 - CEI issued FSAR Amendment 22
- November 20, 1985 - NRC issued SER Supplement No. 7
- November 22, 1985 - CEI issued FSAR Amendment 23
- November 29, 1985 - CEI requested extension of CPPR-148 to 1/31/86
- December 17, 1985 - NRC/CEI meeting in Bethesda to discuss Perry 1 readiness for licensing
- CEI issued FSAR Amendment 25
- December 27, 1985 - CEI requested extension of CPPR-148 to 3/3/86
- January 15, 1986 - NRC issued SER Supplement No. 8
- January 31, 1986 - Magnitude 5.0 earthquake occurs near Perry plant site
- CEI requested extension of CPPR-148 to 4/15/86
- February 6, 1986 - Board Notification 86-03 issued re Perry earthquake
- February 11, 1986 - NRC visit to plant site during which CEI presented earthquake findings - plant readiness for licensing

- February 12/13, 1986 - NRC/CEI briefing of ACRS on preliminary findings re the 1/31/86 earthquake
- February 12, 1986 - CEI issued seismic evaluation report on the 1/31/86 earthquake
- March 4, 1986 - NRC issued SER Supplement No. 9
- March 10, 1986 - CEI formally certified Perry 1 Technical Specifications
- March 12/13, 1986 - NRC/CEI presented details of evaluations findings on 1/31/86 earthquake
- March 14, 1986 - CEI requested extension of CPPR-148 to 5/15/86
- March 17, 1986 - ACRS report to Chairman NRC on NRC findings and confirmatory action items re the 1/31/86 earthquake
- March 18, 1986 - NRC issued a low power operating license for Perry 1