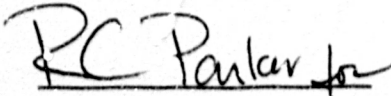
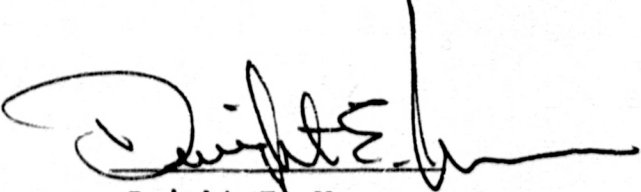


NUCLEAR QUALITY ASSURANCE - NUCLEAR ENGINEERING
ACTION PLAN TO ADDRESS
NUCLEAR MANAGER'S REVIEW GROUP
REPORT NO. R-90-04-NPS
DECEMBER 1990


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We have investigated each of the findings and observations identified in NMRG Report No. R-90-04-NPS. Based on our investigation, we have identified the proximate root causes and have developed corrective action plans for each finding and observation as presented below.

Finding B.1

There were deficiencies in training records; corrective actions for previous findings are not effective.

- o Training on the latest procedure revisions was not always documented on the Individual Training Records (ITR). For example, 243 of 247 site NE ITRs sampled had at least one instance in which required reading had not been signed-off by the due date. In addition, the NE Training Manager reported he had identified 65 deficient ITRs for corporate engineers.
- o Seven of 15 site NQA ITRs and seven of seven corporate NQA ITRs for personnel performing engineering oversight had instances in which required reading had not been signed-off by the due date.
- o Required training was not always being performed.
 - BFN NE was not on distribution for Site Director Standard Practices which resulted in NE personnel not being notified of revisions to two procedures on their ITRs.
 - Due to a computer input error, SQN Civil NE personnel were not notified of seven procedure revisions that were on their ITRs.
 - Some NE personnel interviewed indicated that the revised procedures were on their desk, but they had not read them due to higher priority work.
 - NEP 1.2 "Training," required that training be "current and documented." However, "current" was not defined and some supervisors interviewed stated they had 30 days to update training while others stated they updated training quarterly. However, NP Standard 7.1.1 "Managing Training" states that training be complete "in advance of expiration dates" of procedures.
- o Deficiencies in NE training records has been a long-standing problem. Several EA audits and NRC inspections identified training concerns similar to the NMRG findings since 1985. A comprehensive CAQR regarding these concerns was closed on April 6, 1990 with NQA verification that the training records were current. Subsequently, the problem recurred.

Response

Nuclear Engineering

Deficiencies in NE training and training records have been a long-standing problem and corrective actions have not been fully effective.

The primary root cause is that supervisors and managers do not routinely give training a high enough level of priority compared to other work they manage.

Other contributing factors include:

- Frequent changes in personnel and supervisors during the reorganization and "rightsizing" effort.
- Management determination of training status involved an audit of each supervisors records against job requirements. This was time consuming and did not provide timely information as it was only called for every 90 days.
- Supervisors do not always receive notification of procedure changes affecting training of their personnel.
- Effective dates on procedures may not have always allowed sufficient time to complete and document training.

The following actions will be taken to remedy the problem and prevent its recurrence:

- A memorandum from D. E. Nunn to Department Managers and Project Engineering Managers will be issued to require supervisors and managers to review training status on a regular basis and to make training a routine agenda item at engineering staff meetings.
- Beginning with March 1991, training status will be included in the Corporate Engineering report from J. E. Allen to D. E. Nunn.
- NEP-1.1 presently requires that effective dates of procedures allow time for distribution, training, and other prerequisite activities to take place. Thirty days will be used as a guideline for the time between approval and effective dates. This applies to initial issues, revisions, and procedure change notices. Where the nature of the change dictates a different implementation time, the individual document will "flag" this requirement.
- The NEP on training (NEP 1.2) has been revised to provide direction for the use of the new system. The NEP is presently in final review and will be effective January 31, 1991. A memo will be sent to department managers and project managers of engineering to advise them of the system implementation and require updated manual records by February 7, 1991, to input into the central computer files (NETS). The update of NETS files will be completed within 30 days of receiving these records. A report comparing requirements and actual training for each individual will be sent to each organization after the files are entered into NETS.

The revised NEP-1.2 also contains provisions intended to:

- Ensure that managers and supervisors are promptly notified of procedure changes.
- Clearly place responsibility on the supervisor or manager to ensure training is performed and documented prior to execution of work assignments.

Nuclear Quality Assurance

Discrepancies in NQA ITRs resulted from the failure of direct supervision, during reassignment of duties, to clearly assign responsibilities for maintaining ITRs up-to-date. We have verified that appropriate reading has been completed and ITRs are now up-to-date. Responsibilities have now been clearly assigned for tracking of required reading assignments and maintenance of ITRs. Direct supervisors understand that they will be held accountable to ensure that required reading of procedures is accomplished and properly noted on ITRs.

Finding B.2

Performance indicators did not always provide consistent and accurate indication of engineering performance trends.

- o The data collected for the PIs were not always a broad-based representation of the quality of NE products.
 - Level 1 quarterly trend analysis reports did not equally represent each sites' engineering effort. For example, the PI for NE deliverables in the second quarter NP Level 1 Trend Analysis Report reflected mostly BFN and WBN NE products. Only 2 of the 153 products submitted were for SQN, even though SQN generated approximately 40 percent of the products during this period.
 - Level 1 quarterly trend analysis reports did not always represent the most recent NE work. For example, 105 of the 233 FDCNs used for the April BFN input to the PI for the number of FDCNs/DCN were from design changes more than two years old, with one dating back to 1980. This was noted in the second quarter Level 1 report as the cause of the adverse trend.
- o Off-line review data for the NE deliverables PI had not been submitted from December 1989 until August 1990 because the off-line reviews were behind schedule.
- o An NQA memorandum dated May 1990 (RIMS L19 900509 800), concluded that BFN engineering was not always effective in identifying all FDCNs which were the result of design errors.
- o Guidance for collecting and processing PI data was not well understood. Some August 1990 PI data sheets did not have all attributes of a product completed as specified in an NQA guidance memorandum. Furthermore, during the first two quarters, numerous BFN PI data sheets for NE deliverables were rejected by NQA because they were for incomplete products. SQN PI data sheets continued to be submitted on incomplete products as recently as September 1990.

Response

Nuclear Engineering

In a June 13, 1989 letter to the NRC, TVA documented agreements reached at a June 9, 1989 meeting with the NRC relative to the integration of the Engineering Assurance (EA) functions into NQA and NE. The letter stated we would be "implementing the organizational changes discussed and will monitor the impact of these changes to ensure continued effectiveness of TVA's Nuclear Quality Assurance (NQA) and Nuclear Engineering (NE) organizations." The means selected to "monitor the impact of these changes" in the area of engineering was to define several Performance Indicators (PIs) which involved the attributes of key design documents and processes critical to the quality of design and design basis maintenance. These PIs later were identified as one indicator called "% unsatisfactory deliverables."

In their June 23, 1989 letter, the NRC requested information on how the PIs would be measured and trended in a verifiable and objective manner. In an August 24, 1989 letter to the NRC, TVA committed to add two PIs (% safety evaluations rejected and % field changes per DCN package). It should be noted that the commitment related to the three PIs was established for the purpose of monitoring the impact of the transition of EA's functions into NQA and NE. The letter also stated that at the completion of the third NMRG review, TVA would "reassess the need to continue this monitoring function using the above noted performance indicators." NMRG Report No. 90-04-NPS-Part 3 concluded that "the quantity, quality, and scope of engineering product oversight was continuing at or above that previously conducted by EA."

Based on the NMRG conclusion, it is NE's assessment that the PIs have fulfilled their original purpose and are no longer needed relative to satisfying the NRC commitment. It is recommended that action be taken to close the above commitment to the NRC relative to the EA transition.

Regarding Finding B.2 and based on the three-part NMRG review, we agree that the original set of PIs established to monitor the impact of the EA transition did not always provide consistent and accurate indication of engineering performance. However, the NMRG conclusion stated above reflects that the oversight was at or above that previously conducted by EA. Further, the NMRG report concluded that review of recent data from NQA audits and EFN/SQN NRC SALP Reports indicated that engineering products were adequate and/or improving. The NMRG report stated that NE management did not rely on the present set of PIs to measure NE performance. Instead assessment of performance was based on NQA audits, monitors and other external reviews, as well as day-to-day interface between engineering and NQA. This NE assessment reached the same conclusion as NMRG did without use of the PI data. NMRG concluded that this assessment by NE management regarding the quality of engineering work was sound. Thus, the existing PIs are no longer needed to provide NRC assurance of the continued effectiveness of the NE organization. The current level of oversight from audits, monitors, and interfaces is already sufficient to satisfy the NRC commitment. The need to develop a set of PIs better suited to specific engineering needs was recognized and the data from these PIs could be used to supplement the existing oversight data which NE management presently uses to assess engineering performance.

Using experience gained from the set of PIs used to monitor NE during the EA transition and the assistance from management consultants, the use of PIs is being evaluated to determine which PIs should be retained and/or modified and if any new PIs should be established. This effort should be complete and a revised NE PI program in place by July 30, 1991.

In the interim, efforts will be made to improve NE off-line review schedule adherence such that additional data on NE deliverables is provided thus increasing the usefulness of this PI.

Nuclear Quality Assurance

The major factor to incorrect data entry on PI data sheets was that guidance was not always readily available. The PI data sheets are being revised to include appropriate guidance on the data sheet itself. On-going monitoring will continue in order to identify where individual training is required.

Observation C.1

Although corrective actions had been implemented, CAQRs continued to exceed the 10-day limit for generic implication reviews.

- o NE had implemented the use of Tracking and Reporting of Open Items (TROI) and a "pending items list" to track the status of generic reviews.
- o TROI data showed that in the six months from March through August 1990, 57 of 84 NE CAQRs exceeded the 10-day limit for generic implication review. Three overdue CAQRs were noted during the NMRG review on September 18, 1990.
- o Interviews indicated that the reviews were late due to higher priority activities.

Response

Nuclear Engineering

Exceeding the 10-day limit for generic implication reviews has been a long-standing problem and corrective actions have not been fully effective.

The primary root cause for the problem has been identified as supervisors and managers have not given generic reviews high enough level of priority compared to other work they manage. Some other factors that contribute to the late reviews are:

- Until recently, engineering specialists who perform these reviews were spending a major portion of their time in directly supporting project priorities.
- The reviews performed by the specialists were comprehensive and indepth, thus requiring extensive investigation and coordination, which is a time-consuming process.

Engineering is placing emphasis on being timely with the generic reviews and has improved over the last quarter. Some items Engineering is doing to improve on the timelessness of the generic reviews are:

- PM 89-08 was issued to centralize receipt and control of distribution of incoming generic reviews in the Manager of Services' office, thereby reducing the handling time for incoming reviews.
- The Manager of Services office handcarries the reviews to the departments, thereby preventing any delays in the mail.
- Emphasis is being placed on meeting the time requirements by the Chief Engineer in his staff meetings with the departments.
- A weekly report is generated of the late reviews and is given to the Chief Engineer and the departments.

- **Engineering will continue to monitor the timeliness of the generic reviews and to meet the goal of minimizing the number of late reviews.**
- **Beginning with March 1991, late generic review status will be included in the Corporate Engineering Report from J. E. Allen to D. E. Nunn.**