# Nuclear Quality Assurance - Nuclear Engineering

# Action Plan to Address

# Nuclear Manager's Review Group

# Report No. R-90-01-NPS

April, 1990

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## I. General

We have investigated each of the findings and observations identified in NPRG Report No. R-90-01-NPS. Our responses are provided in Section II.

Based on our investigation, we provide the following overall evaluation regarding findings related to the integration of EA functions:

- The one finding related directly to the integration of EA functions deals with procedures that still refer to EA. This was mainly due to failure to consider a certain group of procedures (Engineering Branch Procedures) in the transition completion plan. As indicated in our response, the specific conditions have been corrected. Since NQA and NE went through an extensive procedure review and revision process as a result of the transition and there are no instances where functions are not being performed, we do not intend to perform another extensive review. We intend to address any such instances as identified.

- As indicated in our detailed response, several steps are necessary to improve the consistency and accuracy of data collection related to NE performance indicators. However, this process is only indirectly related to the integration of EA functions through commitments made to the NRC.

## II. Responses to Findings and Observations

**Finding B.1.** **The method of collecting PI data did not ensure consistent and accurate results.**

a. Percent (%) of unsatisfactory NE deliverables versus the total number of NE deliverables evaluated during NE audits/surveillances and NE offline technical reviews.

- Offline review input data sheets did not consistently reflect the number of products reviewed; e.g., BFN offline review personnel submitted 32 input sheets for 23 products reviewed.

- There was inconsistency in the use of the checklist to monitor the quality of NE products in that applicable checklist attributes were not always evaluated. For example, in some cases the unreviewed safety question determinations (USQDs) was the only attribute evaluated for a design change notice (DCN), although other attributes such as input requirements and calculations needed evaluation to ensure the adequacy of the product.

- Data sheets used for PI input were sometimes duplicated resulting in inaccurate PI output. For example, some of the data sheets from audit BFA89003 were counted more than once.

Response

The establishment of performance indicators (PIs) is important therefore the accuracy and consistency of the data for the PIs is important. As indicated below, steps have been taken to avoid future inconsistencies or inaccuracies.

Our investigation into the details of the NE deliverables PI data indicates that nearly all inconsistencies resulted from inputs from site NQA monitoring activities (relatively few deliverables impacted compared to audit results) with a few inconsistent inputs from NE off-line reviews. Duplication of filed input sheets by NQA also contributed to some inaccuracy. The net result of these inconsistencies is minimal (approximately 1%).

Steps taken to improve the consistency and accuracy of NE deliverables PI data collection:

- NQA reviewed input data sheets to determine if other discrepancies, in addition to those identified by NMRG, existed. The review revealed:
  - Applicable contractor information was not always entered on the form.
  - The individual supplying the data was not always identified on the form.
- Instructions for using the checklist for evaluating NE deliverables have been revised to more clearly indicate:
  - Only one input sheet is to be submitted for each deliverable reviewed.
  - Input sheets are to be submitted only if all attributes applicable to the deliverable have been evaluated.
- The trend input form for collecting NE deliverable PI data has been simplified and additional controls applied. This should assist in obtaining all necessary information on the form and provide means for NQA to avoid duplicate entry.
- A memorandum from L. E. Martin to Those listed dated March 14, 1990 (L17 900314 800) (which issued the revised checklist instructions and simplified input sheet), highlights the above type discrepancies and emphasizes the need for accurate data collection.

- o Meetings (telecon and face-to-face) have been held with the various parties, both in NQA and NE, involved in PI data collection to be sure that there is understanding of the discrepancies and what is expected in the future.

- o NQA files of input sheets have been purged of duplicate entries.

- o The NQA&E Technical Audit Staff will monitor submitted input sheets for a time to ensure consistency and completeness of data supplied.

Finding B.1 (Continued)

b. Number of field changes (i.e., FDCNs) per engineering modification package issued after July 1, 1989, that are initiated because of inadequate design work.

Inconsistent criteria were used in the selection of data at all three sites resulting in inaccurate comparisons of actual NE performance. For example, BFN results which were based on "closed DCNs" would have changed if they had used the WBN criteria which was "field completed" (i.e., 0.3 FDCN/DCN would have changed to 0.4 FDCN/DCN). Procedure Method (PM) 89-06(NE), "Project Engineers' Evaluation of Discipline Performance," specifies the selection criteria as the number of design changes that have been field completed.

Response

BFEP and SQEP are using "closed DCNs" as the basis for identifying field changes requested for correction of design errors. Since this is consistent with the design control process for operating plants, PM89-06(NE) is being changed to reflect this practice. WBEP uses field complete design changes since many design changes will not be closed in the sense that applies at operating plants. The attached figure shows that the inconsistency is not significant to the usefulness of the performance indicator. Regardless of whether closed or field complete design changes are selected for a given period, those design changes represent non-random samples of Nuclear Engineering work from the same time period. The samples are different, but the period is essentially the same. The time period for WBEP is shorter now than for either BFEP or SQEP, but it will lengthen as time goes on.

This performance indicator does not necessarily represent "on-line" measurement of an organization's performance at the time the performance indicator data is collected. However, the important point to understand is that this performance indicator is useful for developing trends over time and for alerting responsible managers to problems that may exist or have existed in their work processes.

Finding B.1 (Continued)

c. Percent (%) of 10 CFR 50.59 evaluations prepared by NE after July 1, 1989, that are rejected by the Plant Operations Review Committee (PORC) because of

Inconsistent criteria were used for the population of USQDs reviewed by PORC (i.e., BFN PORC reviews 100 percent of USQDs while SQN PORC reviews 10 percent). For example, during the period September through December 1989, BFN reviewed 181 USQDs and rejected 4, while SQN reviewed 9 USQDs and rejected none.

Response

Prior to collecting data on this PI, NQA and NE were both aware that BFN PORC reviews 100 percent of USQDs and SQN PORC review 10 percent. We do not consider this a use of inconsistent criteria but is a result of different technical specification requirements between the two sites.

We agree that this PI cannot be used to compare BFEP and SQEP performance and will examine alternative ways of developing it. By September 1990 or earlier, we will decide whether this PI can be made more useful or should be deleted from the PI program.

Finding B.2. Deficiencies were identified in training and procedures.

It was observed that progress had been made in the updating of procedures and training records. However, a sample of NE and NQA training records and procedures noted deficiencies similar in nature to those found in part 1 of the NMRG review. (A NQA audit that was in progress during this review also identified similar training concerns.)

a. Deficiencies were noted in the maintenance of individual training records. These deficiencies were administrative in nature. Observations and interviews indicated that these personnel were properly qualified. Examples of deficiencies identified include:

   - Four of five NE specialists performing offline reviews did not have documented training to PM89-04(NE), "Offline Technical Review and Performance Indicators."

   - Matrices for NE electrical and civil (except WBN site) branches did not require training to the procedures manual methods as required by Nuclear Engineering Procedure 1.2 R2, "Training."

- o A BFN Quality Engineering reviewer performing ECN/DCN reviews did not have documented qualification to perform these reviews per Quality Method Instruction (QMI) 602.2.1, "Quality Engineering Training/Qualification Program."

- o The NQA training records for the corporate quality analysts were not current in that the required reading had not been documented for two of three quality analysts.

Response

Initial training for NE specialists performing offline reviews was provided by the offline review team leader. Since offline reviews are not a formal part of NE's 10 CFR 50 Appendix B program, they are not subject to such Appendix B controls as auditability, documentation, and formal training. Therefore, documentation of training of specialists performing offline reviews was not considered necessary. In areas where it was determined beneficial, PMs have been added to existing matrices or individual training records (ITRs), informal/reading training implemented or in process, and documented on ITRs. PMs are added to the matrix at the discretion of supervisors, and then the controls in NEP-1.2, "Training," apply.

A review of all BFN QE employee training records was conducted. The review identified two additional cases where the employee's training records could not be retrieved. In all three cases, the employees had received the required training as verified by a documented training matrix and through confirmation from the employee's supervisor. Therefore, the training records were re-created and processed in accordance with BFN procedures. In order to prevent recurrence of this condition, new or revised training records will be retained in the applicable work group and distributed to the training coordinator.

Regarding corporate NQA training records, action has been taken to document the completed reading assignments on each of the applicable employee's training record. In order to prevent recurrence of this condition, the training coordinator will track each employee's performance in completing required reading assignments.

Finding B.2 (Continued)

- b. Some NE personnel were not aware of the procedural requirements for placing procedure PM89-05(NE), "Control of Task Performance Contractors," into task scoping documents or for submitting written monthly reports of contractors' performance.

Response

Memorandum from W. S. Raughley to Nuclear Engineering Procedures Manual Holders dated July 27, 1989 (B06 890727 003), distributed the Procedure Methods Manual. This manual included PM89-05(NE) R0. Copies of the memorandum and the attached manual were also sent to project engineers and department managers. The memorandum also requested that training be provided as applicable. A memorandum from W. S. Raughley to All Nuclear Engineering managers dated July 24, 1989 (B06 890724 001) required supervisors to ensure training on Procedure Methods for their employees as applicable. A memorandum from the Vice President, Nuclear Engineering dated March 13, 1990, (B06 900307 001), was issued to project engineers and department managers to reiterate that implementation of Procedure Methods is mandatory.

Finding B.2 (Continued)

c. Some procedures, such as those listed below, were not up to date to reflect the new organization and still referenced EA.

- Browns Ferry Engineering Project PI 88-04 R4, "Change Document Closure."
- Electrical Engineering Branch CI-1 R1, "Preparation, Review, and Approval of Instructions and Standards" (the EA functions transition completion plan did not include actions to revise the NE branch instructions).
- QMI-327 R4, "CAQR Preparation, Processing, and Responses."

Response

Browns Ferry Engineering Project PI 88-04 and QMI-327 have been revised. The Chief Electrical Engineer issued a memorandum dated March 6, 1990 (B43 900306 905), correcting the reference to EA in CI-1.

Both NQA and NE went through an extensive procedure review and revision process to reflect organization changes as a result of the EA integration. Approximately two hundred procedures were reviewed, and over 100 standards, corporate procedures, and site procedures have been revised to reflect the organization changes. One group of procedures that we failed to include in this review were the NE Department Procedures.

There were no instances identified by NMRG (or others) where prior EA functions are not being performed because of procedural discrepancies.

Based on the above, we do not intend to perform another extensive procedure review to determine if all references to EA have been deleted. There may be other instances where EA is referenced. However, we intend to address each instance as identified and make changes to the procedures either as they are routinely reviewed and revised or through the procedure improvement program currently underway.

Finding B.2 (Continued)

d. The requirements of procedures were not always followed.

- o A NQA supplier survey was conducted without documented acceptance criteria or a checklist as required by QMI-403, "Preparation, Performance, and Reporting of Supplier Surveys for Approved Supplier List Placement."

- o The six criteria of PM89-04(NE), "Offline Technical Review and Performance Indicators," for selection of review packages were not always considered, and the selection was not always made by the chief discipline engineer as required by the procedure.

- o Corrections were made to a QA record by a NQA auditor without single lining, initialing, and dating as required by Standard 5.9.80, "Quality Assurance Records."

Response

Regarding the NQA supplier survey, this survey was a followup to a prior full audit. The lead auditor was evaluating specific corrective actions. However, a documented acceptance criteria or checklist as required by QMI 403 was not prepared. All auditors have been instructed to prepare documented acceptance criteria or checklist in the future. Department management will ensure that this is done.

PM89-04(NE) is too restrictive considering the fact that the engineering department managers are responsible for selecting products for review. Before the next review plan is prepared, the PM will be revised to present guidance for product selection, rather than criteria. In addition, Nuclear Engineering will emphasize to all personnel the importance of following procedures and the need to suspend work and revise procedures when they cannot be implemented as written. This will be done by revising NEP-1.1, "Control of Nuclear Engineering Procedures," by May 9, 1990, to state: (1) following procedures is mandatory and (2) supervisors and managers are required to counsel their subordinates when incidences of failure-to-follow procedures are identified. Additionally, this subject will be discussed with all NE managers through staff meetings by May 9, 1990.

Regarding inappropriate method of correcting QA records, this failure to follow procedure was the second time this occurred by the same auditor. The first time it occurred, all auditors were reminded of the requirements of making corrections per Standard 5.9.80. In this

Observation C.1. The offline review process could be enhanced through more comprehensive use of the available checklists.

- The checklists used to review DCN packages did not contain the same level of detail as the checklists used for specific products such as drawings and calculations. These specific product checklists were seldom used in the offline reviews. In addition, interviews with lead engineering personnel indicated that the offline reviews could be more technical in nature.

Response

After discussion within NE and discussions with NQA, NE agrees that the product checklists should be used in review of products included in DCNs. The guidelines for reviewing will be changed, and appropriate product checklists will be used starting with the next offline review.

Observation C.2. Continued attention was needed to ensure timely processing for generic implication reviews of NE CAQRs.

It was observed that the number of NE CAQRs not receiving a generic review within the 10-day timeframe had increased from 0 to 24. This time requirement is contained in the Nuclear Quality Assurance Manual. In accordance with discussions with Engineering Operations personnel, action was taken and the backlog was reduced to 10 as of February 2, 1990.

Response

- The Vice President of Nuclear Engineering emphasized the importance of timely responses in a meeting with department heads on February 12, 1990.
  - A goal of zero home office CAQs and zero late actions was set for all departments.
  - As of March 7, 1990, NMRG-identified items have been further reduced to 2.
  - Two remaining items are currently receiving special management attention to expedite closure.
- TROI data is being sampled on a weekly basis in order to identify areas needing emphasis.
- NE staff is distributing a listing of actions (sorted by departments) weekly.

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# SELECTION OF DCNs
# FOR
# F-DCN/DCN PERFORMANCE INDICATOR