

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No.: 50-220/89-31

Docket No.: 50-220

License No.: DPR-63

Licensee: Niagara Mohawk Power Corporation
301 Plainfield Road
Syracuse, New York 13212

Facility Name: Nine Mile Point, Unit 1

Inspection at: Scriba, New York

Inspection conducted: November 27 - December 15, 1989

Inspector: Tom E. Walker 1/2/90
T. Walker, Senior Operations Engineer Date

Approved by: R. Conte 1/24/90
R. Conte, Chief, BWR Section Date
Operations Branch, DRS

EXECUTIVE SUMMARY

This was a special announced inspection which assessed the licensee's administration of annual licensed operator requalification examinations. The inspector reviewed the examination materials and observed the administration of the examinations. The examinations met the requirements of 10 CFR 55.59 and no violations or deviations were identified. Several areas were identified where improvements could be made to the examination process to minimize the stress on the examinees and to make the examinations more consistent with the guidelines of Examiner Standard (ES) 601 for administration of requalification examinations.

Three unresolved items related to the maintenance of operator licenses were closed based on the review of the licensee's response to Notice of Violation (NOV) EA 89-70 issued on September 22, 1989. An unresolved item was opened to review the licensee's response to Supplement 1 to NRC Bulletin 88-07, BWR Power Oscillations, following submittal.

A preliminary review of the licensee's restart power ascension program indicated that the process for development and planning of the program was thorough. No deficiencies were identified in the administrative procedures for the power ascension test program (PATP).

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DETAILS

1.0 Persons Contacted

1.1 Niagara Mohawk Power Corporation

- *L. Burkhardt, Executive Vice President Nuclear Operations
- *J. L. Willis, General Superintendent
- *K. A. Dahlberg, Station Superintendent, Unit 1
- R. G. Randall, Operations Superintendent, Unit 1
- *R. Seifried, Assistant Training Superintendent
- *R. Sanaker, Operations Training Supervisor, Unit 1
- *M. Laris, Supervisor Reactor Analyst
- *D. Coleman, Assistant Supervisor Reactor Analyst
- D. Helms, Nine Mile Point 1 Systems Supervisor
- D. Boyd, ASTA (Contractor)
- *M. J. Colomb, Manager Regulatory Compliance
- *D. Straka, Regulatory Compliance

The inspector also held discussions with licensed operators and training instructors during observation of the requalification examinations.

1.2 U.S. Nuclear Regulatory Commission

- R. Conte, Chief, BWR Section, DRS
- *R. Temps, Resident Inspector
- W. Cook, Senior Resident Inspector

*Denotes those present for the exit meeting on December 15, 1989.

2.0 Requalification Examinations

The licensee administered annual requalification examinations to all the licensed operators at the facility, active and in-active, during the weeks of November 27, December 4, December 11, and December 18, 1989. These examinations were the first set of examinations administered following implementation of the Systems Approach to Training (SAT) program. The inspector reviewed the examination materials, observed the administration of walk-through and simulator examinations, and reviewed the evaluation results.

No significant deficiencies were identified in the administration of the examinations. The examinations met the requirements of 10 CFR 55.59 for evaluation of licensed operators. Several areas were identified where improvements could be made to the examination process to minimize the stress on the examinees and to make the examinations more consistent with the guidelines of ES-601 for NRC administered requalification examinations.

2.1 Written Examinations

Two aspects of the examination process that could be improved were identified from review of the written examinations that were administered to the licensed operators. Improvements in these areas could reduce the stress on the examinees and provide more accurate evaluation tools.

Some of the tasks that were evaluated on the written examination could have been evaluated more effectively using another testing media. Many of the questions on the written examinations required that a lot of information be supplied in the body of the question, especially in the Limits and Controls section of the examination. When a lot of background information is necessary for a question, another testing media may be more appropriate for evaluation of the task (i.e., static simulator or JPM). Excessive information in the stem of a question can lead to confusion on the part of the examinees. Numerous questions with complex or wordy stems can adversely affect the time validation of the examination.

The point values for a number of the written questions appeared to be inconsistent. The majority of the questions on both portions of the written examination were worth one point, regardless of the difficulty of the question or depth of the answer. These aspects can be taken into account when assigning point values to questions in order to provide an accurate evaluation of the examinee's knowledge.

The method used by the training department to track and analyze the results of the written examinations appeared to be thorough and effective. The results for each question were analyzed to determine areas that required additional training. The results were also used to determine if any of the examination items were unclear or faulty. The licensee uses a computerized tracking system for the written examination test items, which can be used to modify questions that require revision.

2.2 Walk-Through Examinations

The Job Performance Measures (JPMs) used for the walk-through portion of the operating tests were generally of good quality and the tasks covered were relevant to the operator's job. Only one JPM was identified that needed to be modified during the examination cycle, but several things were identified by the inspector that could improve the examination process and make the JPMs more consistent with the guidelines established for an NRC administered requalification examination.

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Only 14 different JPMs were used (two of which were on the same system) during the four week examination cycle. Use of a limited number of JPMs has the advantage of minimizing the preparation effort and providing a maximum amount of data for evaluation of the requalification program. Limiting the number of JPMs used during the evaluations, limits the size of the sample of systems and tasks that can be covered during the examinations. It also increases the potential for inadvertent compromise of the examination. The operators that are examined during the last week of the examination cycle will have seen 10 to 15 examinees per week travelling to virtually the same areas of the plant. This observation combined with the availability of the examination bank (which was distributed to all the operators) makes it very easy for the operators to determine which JPMs will be used during the evaluations. The number of common JPMs used during the requalification examinations provide a large amount of data for program evaluation, but did not test a large sample of job tasks and variety of systems.

While the content of the JPMs was generally of good quality, several inconsistencies were noted in the standards for the specific tasks. Obtaining the procedure and equipment needed for performance of the task was not included in the standard for all the tasks when it was appropriate. Also, observing cautions and verifying prerequisites were not addressed consistently in all the task standards.

Several aspects of the walk-through examination process tended to make the performance of the JPMs unrealistic for the examinees. Making the examination process as realistic as possible minimizes the stress on the examinees. When planning for performance of JPMs in the simulator, the tasks can be selected and scheduled to allow for simulation of the initial conditions for the task to the maximum extent possible. The setup for the JPMs in the simulator can also be coordinated to allow performance of more than one JPM at a time whenever possible. The information provided to the examinee at the beginning of the task can be limited to the information the operator would be given when performing the task in the plant. It is not realistic (or necessary) to read the task standard to the examinee or to list the equipment that should be used. Initial conditions can be provided as cues in the body of the JPMs so that they can be supplied to the examinee on request at the appropriate point in the procedure. Examinees may actually obtain the equipment required to perform a task as long as it does not interfere with plant operation. Evaluation of knowledge of administrative procedures can be incorporated into the examination by requiring the examinee to obtain a working copy of the procedure in the plant.

No problems were identified in the performance of the evaluators during the walk-through process. The tasks were presented clearly and follow-up questions were asked when appropriate. The evaluators need to stress verbalization and the availability of reference

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materials more often for the operators that are unfamiliar with the examination process.

The JPMs did not always provide complete information in a format to aid the evaluators during the administration of the walk-through examinations. The task standards can be formatted in the same manner as the procedure and the procedure step numbers may be referenced to aid the evaluator in evaluating procedured compliance. Not all procedure steps were included in the JPM. The standard may be eliminated for steps that require no action (active or passive) on the part of the operator. Information that is not in the procedure could be included in the standard to aid the evaluator in ensuring that a step is performed correctly (i.e., provide specific instructions for nulling a controller).

The prewritten questions were clearly worded and most could not be directly looked up in the procedure. The Knowledge and Ability (K/A) ratings were not included for the prewritten questions so the importance of the question with respect to the operator's job could not be verified. All the JPM questions were at the RO level. Questions for Senior Reactor Operators (SROs) only are appropriate to test knowledge of Technical Specifications and other tasks that the SRO is responsible for performing.

Following administration of the examinations, the training department reviewed the results of the walk-through examinations to determine program weaknesses and identify faulty questions. The results were also used to determine the accuracy of the time validation of the JPMs.

2.3 Dynamic Simulator Evaluations

The scenarios used for the simulator portion of the operating tests were sufficiently challenging to meet the requirements of 10 CFR 55.59 for evaluations. The scenarios provided for evaluation of a comprehensive sample of the items specified in 10 CFR 55.45(a) for the content of operating tests.

The process for identification of Individual Simulator Critical Tasks (ISCTs) was not always consistent with the guidelines for NRC administered requalification examinations. The licensee needs to ensure that all tasks that are identified as critical tasks meet the definition for ISCTs. The training department had recently revised the dynamic simulator scenarios to delete many of the critical tasks, but many critical tasks remained that did not meet the definition of an ISCT. The identification of ISCTs were not consistent among all the scenarios. Several instances were noted in which a task was designated as critical in one scenario and was not critical in a similar situation in another scenario.

In several cases, important operator actions were not included in the list of expected operator actions for the simulator scenarios. It is important to include all significant operator actions (and direction

of the action when appropriate) in the scenario so that the actions can be evaluated as potential critical tasks.

The inspector identified a potential for compromise in the simulator examination process. While reviewing the scenarios that were going to be administered to a crew consisting of staff license holders, including the Operations Superintendent and the Assistant Training Superintendent, the inspector identified that one of the scenarios had been used previously during the examination cycle. This created a potential for compromise of the examinations since the Operations Superintendent participated as an evaluator during the dynamic simulator evaluations. When this potential was identified to the licensee, a scenario that had not been used was substituted into the staff crew's examination.

3.0 Review of Licensee Response to Notice of Violation EA 89-70

The inspector reviewed the licensee's response (dated November 16, 1989) to Notice of Violation (NOV) EA 89-70 (dated September 22, 1989) with respect to the violations associated with the licensed operator requalification program (violations 1.A, 1.B, and 1.C). The licensee's corrective actions in these areas were also assessed during several previous inspections of the requalification program. The licensee's corrective actions noted in the response to the NOV and in the Restart Action Plan (RAP) should be adequate to correct the identified deficiencies; therefore, the following unresolved items can be closed:

- Closed (220/88-10-01): Incomplete requalification training
- Closed (220/88-10-02): Failure to notify Station Superintendent
- Closed (220/88-10-05): Effectiveness of the Quality Assurance program in identifying and correcting deficiencies in the requalification program.

4.0 NRC Bulletin 88-07 and Supplement 1, BWR Power Oscillations (NRC Temporary Instruction 2515/99)

NRC Inspection Report 50-220/89-24 documents the evaluation of the licensee's implementation of the actions specified in NRC Bulletin (NRCB) 88-07 and Supplement 1 to this bulletin. At the time of that inspection, the licensee had completed implementation of the actions, but had not submitted their response to Supplement 1 pending internal verification of the actions. The licensee's response to the bulletin will be reviewed following submittal (UNR 50-220/89-31-01).

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5.0 Restart Power Ascension Test Program

The inspector performed a preliminary review of the licensee's restart power ascension test program (PATP). This review consisted of a review of draft procedures N1-88-8.0, 'NMP1 Restart Power Ascension Program Description'; N1-88-8.1, 'NMP1 Restart Power Ascension Testing'; and N1-88-8.2, 'NMP1 Restart Power Ascension Self-Assessment'. The inspector also observed PATP training and held discussions with the engineers responsible for development and planning of the PATP. The inspector focused on the administrative aspects of the program and did not perform a technical review of the associated test procedures.

The inspector had several questions concerning the PATP procedures, all of which were answered during the discussions with the licensee representatives. These discussions indicated that the process used for development of the PATP was thorough and meticulous. Self-assessment is an integral part of the program and depends upon effective implementation by each department involved in the restart process.

Further review of the PATP will be performed prior to restart following licensee submittal of the approved procedures.

6.0 Exit Meeting

Management was informed of the purpose and scope of the inspection at the entrance interview on November 27, 1989. The findings of the inspection were periodically discussed with station management throughout the inspection period and were summarized at the exit meeting on December 15, 1989.

Attendees at the exit meeting are listed in section 1.0 of this report.

