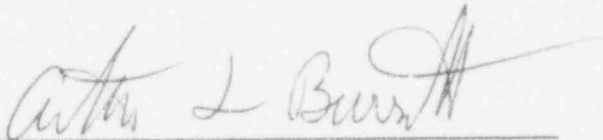
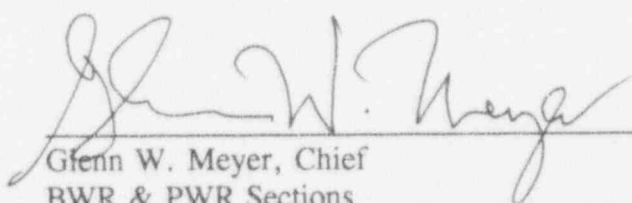


U. S. NUCLEAR REGULATORY COMMISSION
REGION I

DOCKET/REPORT NO: 50-333/94-13
LICENSEE: New York Power Authority (NYPA)
FACILITY: FitzPatrick Nuclear Power Station
Scriba, New York
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INSPECTORS: A. Burritt, Operations Engineer
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INSPECTOR: 
Arthur L. Burritt, Operations Engineer
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Date 6-8-94

APPROVED BY: 
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Date 6-9-94

INSPECTION SUMMARY

Report No. 50-333/94-13

The inspectors evaluated the acceptability of the FitzPatrick licensed operator requalification training program through a performance-based inspection, using the NRC Inspection Procedure 71001, "Licensed Operator Requalification Program Evaluation." Week two of NYPA's 1994 requalification examination cycle (which included only the operating tests) was observed and assessed.

Operations

The FitzPatrick requalification training program satisfied the requirements of 10 CFR 55.59 for the areas reviewed. Further, the inspectors judged the program to be generally good overall. NYPA management was closely involved in requalification training administration and ensured that plant modifications, audit recommendations, and operator feedback were considered for revision of the program. Crew and individual evaluations were detailed and comprehensive. However, NYPA did not have a systematic methodology in place to ensure that identified operator performance deficiencies were included in subsequent training and evaluations. Also, NYPA did not identify plant specific priorities for the focus of the annual evaluations. Finally, there was a lack of objectively defined performance standards for crew critical tasks in the observed dynamic simulator scenarios.

During the conduct of dynamic simulator scenarios, emergency plan classifications were not always timely or received the appropriate priority. Also, an SRO, either the shift supervisor or the assistant shift supervisor, did not always maintain a broad overview during emergency plant conditions. Verification of automatic initiation and isolation signals was frequently not performed.

Plant Support

As mentioned above, the inspectors identified a generic concern regarding emergency plan implementation following operational events. Observed crews did not consistently activate the emergency plan or give appropriate priority to event classifications.

DETAILS

1.0 BACKGROUND AND SCOPE

During the week of May 16, 1994, the NRC conducted a performance-based inspection of the FitzPatrick requalification training program, using the newly-developed NRC Inspection Procedure 71001, "Licensed Operator Requalification Program Evaluation." The purpose of this inspection was to evaluate the acceptability of the FitzPatrick licensed operator requalification training program with respect to 10 CFR 55 regulations and to assess the effectiveness of the training. The primary focus was on NYPA's operator evaluation process and, to some extent, requalification program revisions as a result of this evaluation process.

The inspection involved many of the aspects employed by the previous NRC staff-administered requalification examinations, including a review of the operating tests from the licensed operator requalification examination and observation of crew/individual performance during the conduct of simulator scenarios and job performance measures. In addition, interviews with licensed operators, training instructors, and supervisory personnel were conducted. Administrative procedures and documents associated with the training program and its implementation were also reviewed.

The inspectors used NUREG-1021, "Operator Licensing Examiner Standards," Revision 7, as a basis for determining the adequacy of the NYPA operator examination process.

2.0 TRAINING ADMINISTRATION

2.1 Training Program Review Committee

NYPA has conducted quarterly meetings of its training program review committee (TPRC), which was typically staffed by the operations manager, training manager, operations department training coordinator, operations training supervisor, instructors, a licensed senior reactor operator (SRO), and a reactor operator (RO). The inspectors reviewed the minutes of past meetings and interviewed committee members and concluded that these meetings were beneficial in the consideration and resolution of plant issues that merited inclusion into the training program. In particular, the TPRC developed action items based on management observations of training, quality assurance (QA) audit recommendations, individual training feedback forms, and facility and industry operating experience. The disposition of each item considered was clearly documented, with individual accountability assigned for items requiring action. Further, the TPRC meetings addressed personnel performance trends, upcoming training schedules, and a review of all open action items.

2.2 Management Observation of Training

The inspectors reviewed documentation of completed management evaluations of training. The inspectors considered this area a program strength based on the frequency of line management observations of operator training, as well as the consideration given to issues raised as a result of their noted concerns. Senior line managers expended approximately 54

hours in the last 13 months observing all aspects of training, including classroom lectures and simulator scenarios. In addition, operator and instructor interviews confirmed that the operations manager or the assistant operations manager conducted plant update briefings for the operating crew in requalification training, typically on a weekly basis.

2.3 Operator Feedback

The inspectors reviewed the method by which operators fed back recommended training program enhancements to the training staff. The inspectors noted that a new version of the training feedback form (established by AP-04.05) was recently developed to expand the quality and quantity of feedback from individuals completing a training cycle. The inspectors determined that the new form was a significant improvement over the previous feedback form in that it allowed for essay-type responses to critical questions about training quality, rather than merely assigning a numerical rating to various training department practices. Processing of these feedback forms included an initial screening by training department instructors and then, if the issue warranted, forwarding to the TPRC for resolution.

The inspectors judged another new initiative by the training department involving input to the training program as a strength. NYPA has recently incorporated suggestions by licensed operators to provide a listing of scheduled training topics to the operators several weeks before the upcoming training cycle begins to solicit input on these topics. Utilizing this input, the training staff has modified scheduled lesson plans to better address the training needs of the operators and has achieved a more focused level of instruction. Interviews with licensed personnel confirmed that this initiative proved beneficial to operator training.

2.4 Crew Performance Feedback

In an effort to further enhance the focus of crew requalification training, NYPA recently established weekly training notebooks for each operating crew primarily to document observed weaknesses of the crew during simulator scenarios. The inspectors examined a sample of these notebooks and determined that this initiative was another positive attribute of the requalification training program. At the commencement of each new training cycle, these notebooks are being reviewed by the crews and instructional staff to ensure that upcoming training and evaluations of crew performance can analyze trends in proficiency of the noted weak areas. Though informal, these notebooks should help to provide link between the crew's observed performance and their subsequent simulator training.

3.0 EXAMINATION DEVELOPMENT

The inspectors reviewed only the operating test portion of the requalification examination. NYPA conducts written tests every 24 months and one was not scheduled for 1994.

3.1 Examination Development/Sample Plan

The inspectors concluded that, overall, the operating examination administered during the week of the inspection was acceptable. However, NYPA did not have a systematic methodology in place that defined how the examination was constructed. The inspectors reviewed the 1994 sample plan for the annual operating examination and determined that it was only an accounting of all topics covered during the requalification training; that is, it was not used as a planning tool for development of the annual examination. The inspectors questioned the examination development strategy with the training staff and determined that there was no other defined process used to construct the annual examinations.

The sample plan provided a list of all topics covered in the training program and the corresponding amount of training time spent on each. The topics covered on the annual examination were identified; however, only the type of evaluation tool used was indicated and not the quantity of testing or specific objectives addressed for each of the topics. The sample plan did not distinguish between individual crew examinations; instead, it was a compilation of all examinations administered and, therefore, provided no way to determine if the intended evaluation focus was achieved. There was no threshold percentage or correlation between time spent on a topic and whether or not it was included in the annual examination. Further, the sample plan did not identify testing in areas not specifically covered during the two-year requalification cycle.

The inspectors interviewed the training staff to determine how generic performance deficiencies were incorporated into subsequent training and evaluations. The NYPA training staff could not demonstrate a link between previously identified generic performance deficiencies, subsequent training, and the annual evaluations.

The inspectors concluded that NYPA did not have a systematic methodology in place to ensure that identified operator performance deficiencies were included in subsequent training and evaluations. Further, NYPA did not identify plant specific priorities for the focus of the annual evaluation.

3.2 Simulator Scenarios/Performance Standards

The inspectors reviewed the scenarios used during the examination and concluded that the scenarios were an excellent tool for measuring the competency of a crew as well as the individuals that made up the crew. The inspectors found the scenarios challenging; however, the evaluation standards in the scenarios were not sufficiently specific or objective to assure consistent evaluations of operator performance. Specifically, the critical tasks did not have measurable performance indicators with defined acceptable limits.

The inspectors concluded that, even though NYPA's evaluations of crew performance were consistent with the NRC inspectors' independent evaluations, there was no assurance that subsequent evaluations (pass/fail decisions) would remain consistent with varied operator

performance or different evaluators. The training supervisor indicated that NYPA would, in the future, include specific and objective performance standards in the scenario documentation of critical tasks.

3.3 Job Performance Measures (JPMs)

The inspectors reviewed the JPMs used during the examination and determined that they were a weak evaluation tool to assess operator performance and comprehension. The five JPMs administered as a set were simplistic, with typically only one action step and one verification step. Additionally, none of the JPMs selected required alternate paths, and all JPMs were common for both the ROs and SROs.

The inspectors also reviewed the previous week's JPMs and determined that the composition of those JPMs more effectively assessed the competency of the licensed operators. The first week's evaluation contained a better mix of JPMs to test the operator's ability to manipulate system components and controls, and thereby provided a more effective evaluation tool.

The inspectors concluded that the facility had not performed a critical review of the JPMs administered during the week of the inspection to ensure that, as a set, they provided a comprehensive evaluation of the operators' ability to manipulate system components and controls. The training supervisor stated that the future examinations would be more carefully reviewed.

4.0 EXAMINATION ADMINISTRATION

4.1 Test Implementation

The inspectors observed week two of the annual requalification operating test cycle, including both simulator scenarios and JPMs, and determined that the exams were effectively administered overall. The examinations were conducted as planned, and due consideration was given to minimizing operator stress by administering the test over two days (per crew); one day for the simulator scenarios and one day for the JPM's.

4.2 Simulator Performance

Throughout the entire week of testing, the inspectors noted no significant deficiencies with respect to the simulator's performance or its fidelity to the reference plant. It was observed in the construction of one scenario, however, that instructors had manually manipulate certain plant containment parameters (contrary to the modeled response) in order to ensure operators would take action in accordance with a particular emergency operating procedure (EOP). Though in this instance no significant problems developed as a result, the inspectors

determined that conducting scenarios in this manner increased the potential for inconsistent examinations, negative training, and the ability for the simulator instructor to either aid or hamper crew response activities. NYPA instructors indicated during interviews that this type of scenario development was the exception rather than the rule.

4.3 Crew Evaluations

The inspectors monitored a portion of the post-simulator exam deliberations conducted by NYPA evaluators and noted them to be detailed and thorough. Written crew evaluations were comprised of several documents, including a step-by-step comparison of actual crew performance to expected response as listed in the scenario (sat/unsat), a comprehensive analysis of crew competencies utilizing evaluation forms similar to those in the examiner standards (NUREG-1021, Rev. 7), and a crew performance summary sheet drafted by the training department articulating all significant strengths and weaknesses observed for each particular crew. Further, the inspectors reviewed the results of the previous week's examination and found those evaluations to be of similar quality. The inspectors independently evaluated crew performance during the operating tests; and, with the exception of those items highlighted in Section 5.0 below, the facility evaluators identified all of the deficiencies noted by the inspectors.

4.4 Operator/Crew Debriefings

The inspectors concluded that examination debriefings were a weakness because crews were scheduled to return to shift duties following the examination without the benefit of detailed performance feedback from the NYPA evaluators. NYPA did not conduct a detailed discussion of observed strengths and weaknesses with the tested crews during the week the examination was administered; rather, comprehensive debriefings were scheduled to occur at the beginning of the next training cycle (approximately six weeks after the examination). The training manager stated that this was not the normal practice and that NYPA would ensure more timely feedback.

Short, informal debriefs with individual operators were conducted immediately following the conclusion the JPM portion of the operating test. The inspectors observed two such debriefings and determined that they were primarily intended to inform the operator of his pass/fail status with regard to the exam and to highlight only those performance deficiencies that could be immediately recalled by the individual evaluator conducting the debrief. After addressing this issue with NYPA management, the inspectors determined that, had an individual or crew demonstrated significant performance deficiencies, the evaluators would have notified and retrained the individual or crew prior to their resumption of shift work.

4.5 Examination Security

The inspectors reviewed the examination security measures employed by NYPA to ensure that test material was not compromised prior to its administration. The inspectors concluded from exam observation and personnel interviews that the existing security measures were acceptable. However, NYPA had no formal procedure for ensuring exam security, and relied on individual integrity backed up by signed security agreements. The inspectors did note that, in the sample reviewed, there was minimal duplication of test material from one week to the next.

5.0 OPERATOR PERFORMANCE

The inspectors observed the simulator examinations administered by NYPA to an operating and a staff crew during the week of the inspection. Each crew consisted of two SROs, three ROs, and a nonlicensed shift technical advisor (STA). The same two scenarios were used for each of the two crews examined. The discussions in this section are based on the observations made by the inspectors during these four scenarios only.

5.1 Observed Strengths and Weaknesses

The inspectors observed crew performance strengths demonstrated consistently throughout the dynamic simulator examinations as follows:

- Shift supervisor briefings. Briefings consistently provided the crew with current plant status, current operator actions and a projection of future operator actions required for event mitigation. The briefings were informative, concise, and timely.
- Recognition of EOP reentry conditions. EOPs were appropriately reentered at their beginning when plant conditions degraded to a point that required additional entry into EOPs already implemented.
- Use of and adherence to alarm response procedures (ARPs) and operator aid cards (procedure excerpts).

The inspectors observed crew performance weaknesses demonstrated during the dynamic simulator examinations. The weaknesses, in the cases observed, did not prevent successful event mitigation or have significant safety consequences. However, these weaknesses could challenge the crew's ability to successfully mitigate degraded plant conditions. The weaknesses were as follows:

- Verification of initiation and isolation signals. The crews typically did not perform verification of automatic safety system initiations or primary containment isolations. This weakness was identified by the NYPA evaluators to a limited extent.

- Augmentation of pressure control when using the SRVs to maintain reactor pressure. The crews did not exercise some available pressure control options (HPCI, RCIC, steam line drains) when maintaining reactor pressure using SRVs. The crews could have placed more emphasis (as manpower was available) on the use of alternate methods to augment SRVs and thereby minimize the heat input to the suppression pool. This weakness was not identified by the NYPA evaluators.

The assistant operations manager and the training supervisor acknowledged the inspector's observations and stated that they would continue to evaluate the crews to determine the generic implications of the observed deficiencies.

5.2 Emergency Plan Implementation

The inspectors observed five emergency plan classifications during or after the dynamic simulator evaluations. The inspectors determined the classifications were not made in a timely manner. The classification determinations were generally made by the STA and subsequently reviewed and/or approved by the shift supervisor (SS). In some cases, the SS referenced the classification guide and, in other cases, signed the notification form approving the STA's classification with no apparent review. In three cases, the time from when the event conditions was classifiable until when the declarations were made was in excess of 25 minutes. The inspectors observed that, in some cases, the crew implemented the "call out" procedure without classifying the event in order to start the process of manning the emergency response facilities. Although this mitigates some of the effects of delayed classification, it appeared that this approach may be overly relied upon by control room crews in order to reduce the burden on the SS during the initial event mitigation efforts. It also appeared that, in some cases, the classification declaration was delayed while the STA gathered the information necessary for the required notifications.

The inspectors concluded that emergency plan classifications were not receiving the appropriate degree of priority. This was apparently due to the SS task assignments/workload during transients, which led to degraded plant conditions. Shift supervisor responsibilities are discussed further in Section 5.3 of this report. This weakness was not identified by the NYPA evaluators. The assistant operations manager stated that NYPA would review the timeliness of classification during subsequent examinations and take appropriate action if warranted.

5.3 Licensed Operator Utilization/Task Assignments

The shift structure (i.e., crew member roles and responsibilities) did not appear to ensure that an SRO was available to maintain a broad overview of plant response and mitigation efforts during all transient and accident conditions.

The shift supervisor implemented and directed EOP actions. This task required implementation of multiple EOP flow charts, directing three to four personnel performing

control board manipulations, monitoring multiple CRT screens and control room communications for plant parameters and conditions, and also implementing the emergency plan. The assistant shift supervisor (ASS) provided direct supervision of control board operations for three reactor operators (RO) and at times performed control board manipulations. Additionally, he directed repair and system restoration efforts of nonoperations personnel outside the control room. In some cases, both SROs were giving commands to the three ROs performing control board manipulations.

The inspectors concluded that, based on the limited observations, an SRO, either the shift supervisor or the assistant shift supervisor, was not always maintaining a broad overview for all plant conditions. This was most evident when the assistant shift supervisor performed control board manipulations. This weakness was not identified by the NYPA evaluators. The facility's assistant operations manager stated that NYPA would continue to review control room task assignments to ensure optimum utilization of each crew member. Further, the assistant operations manager stated that NYPA was still in the process of refining the STA's role for crew support.

6.0 MEDICAL RECORDS

The inspectors reviewed the medical records of 10 licensed operators and determined that NYPA performed thorough, annual medical examinations on licensed operators. It was further noted that, for the files reviewed, no changes in licensed operator medical status required NRC notification. NYPA used a checklist to enable the physician to perform the medical assessment. The checklists were subsequently reviewed by the site nurse and the requalification program administrator to ensure that any changes in medical conditions were appropriately identified. The checklist forms were accurate and generally complete. One checklist was missing indication of two assessments; however, this appeared to be an isolated clerical error.

The inspectors concluded that NYPA's administrative controls were effective in ensuring that medical examinations of the licensed operators were maintained current (completed every two years) and that NRC notification would have been made if an operator's medical condition had changed, affecting his ability to perform licensed duties.

7.0 EXIT MEETING

An exit meeting was conducted on May 20, 1994, during which the NRC inspectors reviewed the scope and findings of the inspection. Key NYPA persons contacted during the inspection and attendees at the exit meeting are listed below: (*Denotes those present at the exit meeting.)

*H. Salmon	Resident Manager
*R. Barrett	General Manager-Operations
*M. Colomb	General Manager-Support Services
*R. Locy	Operations Manager
*P. Brozenich	Assistant Operations Manager
*D. Topley	Training Manager
*F. Catella	Operations Training Supervisor
*D. Simpson	ORG/Licensing Engineer
G. Fronk	Requal Instructor
P. Russell	Assistant Shift Supervisor
W. Collins	Senior Nuclear Operator
C. Soucy	Occupational Health Nurse