



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA STREET, N.W.
 ATLANTA, GEORGIA 30323

Report Nos.: 50-259/93-16, 50-260/93-16, and 50-296/93-16

Licensee: Tennessee Valley Authority
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 1101 Market Street
 Chattanooga, TN 37402-2801

Docket Nos.: 50-259, 50-260, & 50-296 License Nos.: DPR-33, DPR-52, & DPR-68

Facility Name: Browns Ferry 1, 2, and 3

Inspection Conducted: April 14 - 16 and April 21 - 23, 1993

Inspector: James H. Moorman
 J. H. Moorman

5-17-93
 Date Signed

Inspector: Michael E. Ernest for
 E. Lea

5-17-93
 Date Signed

Approved by: Michael E. Ernest
 M. E. Ernestes, Chief
 Operator Licensing Section 2
 Operations Branch
 Division of Reactor Safety

5-17-93
 Date Signed

SUMMARY

Scope: This routine, announced inspection was conducted in the area of licensed operator requalification training. This area of training was inspected to determine if the operators were being adequately prepared to properly mitigate abnormal and emergency plant conditions in the control room that had been reconfigured in accordance with the Control Room Design Review.

Information gathering in accordance with the guidance in Temporary Instruction 2515/119, Water Level Instrumentation Errors During and After Depressurization Transients (GL 92-04), was completed.

Results: In the areas inspected, violations or deviations were not identified.

The operators were able to respond to simulated abnormal and emergency situations adequately. The plant control room changes that resulted from the control room design review did not hinder the operators in performing their licensed duties.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- A. Burnette, Shift Operating Supervisor (EOIs)
- *M. DeRoche, Operations Training Manager
- *M. Herrell, Operations Manager
- *C. Hsieh, Licensing Engineer
- *R. Moll, Operations Superintendent

Other licensee employees contacted during this inspection included licensed operators, training instructors, and administrative personnel.

NRC Resident Inspectors

- *C. Patterson, Senior Resident Inspector
- J. Munday, Resident Inspector

*Attended exit interview

2. Licensed Operator Requalification Training

a. Background

The Browns Ferry Unit 2 Control Room has undergone significant modifications as a result of the Control Room Design Review (CRDR) effort. The CRDR resulted in modifications to the control panels to make them more "user friendly." This was accomplished by changing the location of switches and indication meters, and providing additional indication meters. Also, the size of some control switch handles was changed. Successfully mitigating an abnormal or emergency plant situation requires plant operators to possess and use many skills and abilities. One of these abilities is to quickly locate and properly operate plant controls when necessary. This ability is evaluated by the NRC in the process of licensing operators. Since major changes in the man-machine interface could have an effect on the operators' ability to perform their licensed duties, an assessment of how the operators were being trained on the CRDR changes and their progress in adapting to them was necessary.

b. Inspection

To determine if the operators were adapting to the changes in the control room, the inspectors observed training and evaluation simulator scenarios being conducted as part of Cycle 3 of the normal operator requalification program. Five crews were observed during the two weeks of observation. The scenarios involved abnormal and emergency plant situations. In response to these situations, the operators were required to follow plant procedures to mitigate the consequences of the situation and ultimately place the plant in a safe

condition. With minor exceptions, the operators' performance on these scenarios indicated that they had adjusted to the new control board configurations. While there is room for improvement in familiarity with the new controls and indications, particularly in the use of the Integrated Computer System (ICS), the operators demonstrated that they could perform licensed duties on the new control boards.

Training for the CRDR modifications was conducted during Cycle 2 and Cycle 3 of the requalification program. Cycle 2 consisted of classroom and simulator training on CRDR changes and other plant modifications, mostly designed to familiarize the operators with the changes. Cycle 3 classroom training covered Emergency Operating Instructions (EOI) and Technical Specification changes, the new Rod Worth Minimizer and the ICS. Cycle 3 consisted of simulator training on normal, abnormal and emergency plant operations. This gives the operators an opportunity to regain proficiency in performing their licensed duties on newly redesigned control boards. Since the operators get the opportunity to practice mitigating reactor accidents during Cycle 3, all operators should attend the full week of training. All operators are currently scheduled to receive Cycle 3 training. However, this was not always the case. Plant management had changed the projected plant startup date from May 20, 1993 to May 5, 1993. This would have prevented two shifts of operators from receiving the abnormal and emergency operations training presented as part of Cycle 3 training. Had the early startup date been met, the possibility existed that 15 licensed operators would have been available to take the controls of a newly redesigned control board without the benefit of having trained on abnormal and emergency operations using them. Plant management informed the inspector that the startup schedule had slipped. As of the date of this inspection, the new startup date was projected to be on or near May 15. If this is the actual date, all licensed operators at Brown Ferry will have the opportunity to attend Cycle 3 training.

The operators identified problems with plant procedures while using them in the simulator. Procedure change request forms were completed and forwarded to the procedure group for resolution. After resolution, the procedure group provides a copy of the resolution to the change request originator.

While the operators demonstrated proficiency in locating controls on the control boards, they had weaknesses in crew communications. Operators on some crews rarely practiced "repeat backs" in their communications. This was especially true during the implementation of the EOI, when it is the most desirous. The instructors highlighted this deficiency to the operators, but did little to emphasize the importance of improvement.

Training has been conducted on water level instrument errors caused by rapid plant depressurization as discussed in NRC Information Notice.

No. 92-54 "Level Instrumentation Inaccuracies Caused by Rapid Depressurization" and Generic Letter No. 92-04 "Resolution of the Issues Related to Reactor Vessel Water Level Instrumentation in BWRs Pursuant to 10 CFR 50.54(f)." This training will be incorporated as an integral part of the requalification training program when the BWR owners group provides a final resolution to the problem.

3. Exit Interview

The inspection scope and results were summarized on April 23, 1993, with those persons indicated in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results. Proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

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