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U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
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Washington, D.C. 20555

Gentlemen:

Subject: Oyster Creek Nuclear Generating Station (OCNGS)  
Docket No. 50-219  
Detailed Control Room Design Review

Pursuant to our letter of September 19, 1986, please find attached a description and a proposed schedule for the resolution of human engineering discrepancies identified as a result of comparing the control room with the display and control requirements of the Emergency Operating Procedures developed from Revision 4 of the BWR Owner's Group Emergency Procedure Guidelines. Although a proposed schedule is provided, please note that the modifications are subject to the review methodology described in the Integrated Schedule Plan. If there are any questions, please contact M. W. Laqqart at (201)316-7968.

Very truly yours,

E. E. Fitzpatrick  
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ATTACHMENT

OYSTER CREEK NUCLEAR GENERATING STATION  
DETAILED CONTROL ROOM DESIGN REVIEW  
EMERGENCY OPERATING PROCEDURES TASK ANALYSIS

A task analysis was performed on the Emergency Operating Procedures, based on Revisions 2, 3 and 4 of Emergency Procedure Guidelines (EPGs), as implemented at the Oyster Creek Nuclear Generating Station. The objectives of this analysis were to establish that the information and control requirements necessary to implement the procedures (1) are identified in a complete and unambiguous way, (2) are available to the operator, and (3) that the ranges and precision of the available instrumentation matches that required by the procedures.

The symptom based Emergency Operating Procedures derived from the BWROG EPGs for OCNGS were initially implemented in 1983. At that time detailed reviews of the procedures, including extensive walkthroughs, were conducted. The latest revisions to the procedures were made in the fall of 1986. The principal revisions involved major modifications of the Level Restoration, Containment Flooding, Level/Power Control, and Primary Containment procedures and the addition of a Radioactivity Release Control procedure and a Secondary Containment Control procedure. The primary emphasis of this task analysis was on the modified and new procedures. The reports and material from the prior evaluations of the initial version of the procedures were used in performing the task analyses for the original procedures where the procedures had not been changed appreciably.

The task analysis of the Emergency Operating Procedures involved the following steps:

- (1) Principal Functions were identified. In this regard, three types of principal functions were defined:
  - Tasks which require the operator to take action to control a plant parameter to a specific value or range or to change the status (e.g., initiate or shutdown a system) of a plant system or component.
  - Conditional actions which require the operator to cease the current procedure and take further action (involving either carrying out a task, branching to other procedures, or checking another conditional) based on the value of the parameter or the status of the system in comparison with criteria stated as part of the procedures.
  - Branches which redirect the operator to other procedures or to other parts of the same procedures.

- (2) The information and control requirements were identified for each principal function. This step included:
- defining required decision and action functions;
  - identifying plant parameters involved in carrying out each function;
  - establishing the precision and range with which the plant parameter(s) must be known to perform each function, and;
  - identifying controls required to perform each function.
- (3) For each plant parameter and control, the location of the available instrument(s) or control(s) to be used by the operator to implement the procedures was identified along with the precision and range of each instrument. In this regard the precision of each instrument(s) was determined by the smallest unit to which the meter or recorder can be read. In many cases, several instruments could be used by the operator to establish or verify a plant parameter value. In those cases, the instruments were prioritized by available precision and range, convenience of locations, and/or by operator preference.
- (4) Selected parts of the procedures were verified by discussion with cognizant GPU Nuclear personnel and by walkthroughs at a simulator and in the control room. Since this review is the second conducted of these procedures, data obtained from the extensive walkthroughs conducted during the first review were used where appropriate.

The Human Engineering Deficiencies (HEDs) that were found as a result of these task analyses are summarized below along with the planned resolutions and schedules for completion:

HED 1 Finding - The drywell hydrogen and oxygen recorder scales are different for channels A and B and the scales for oxygen appear non-linear.

Resolution - Provide new recorder scales which are clear and accurate.

Schedule - New scales will be provided during the 12R outage.

HED 2 Finding - Recorder IA55 on Panel 8R is not operational and is used in determining bulk drywell temperatures, and reference leg temperatures for RPV level.

Resolution - Repair Recorder IA55.

Schedule - Completed February 1987.

HED 3 Finding - CRD pump flow meters do not read required range of CRD flow required by EOPs. Presently read 0-100 gpm; 0-150 gpm is required.

Resolution - Rerange flow transmitters and indication to achieve 0-150 gpm range.

Schedule - Transmitters and flow meters will be reranged during the 13R outage.

HED 4 Finding - Reactor Building differential pressure indicator is not visible to operator to indicate an EOP entry condition, is not alarmed, does not have correct range for procedure, and is presently out of service.

Resolution - Provide a properly ranged instrument, and install an alarm to alert operator of exceeding EOP entry condition.

Schedule - Properly ranged instrument and alarm will be provided during the 13R outage.

HED 5 Finding - The standby liquid control system tank level instrument is not operational.

Resolution - Repair instrument.

Schedule - Completed March 1988.