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SUBJECT: Updates status of design change activities re 850628 DCRDR summary rept.Committee organized to process & prioritize proposed mods to control rool panels.Formal methodology necessary to implement changes.

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Public Service

October 31, 1985

Mr. H. L. Thompson Jr., Director
Office of Nuclear Reactor Regulation
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
DCRDR Status Update

References: 1) Letter from D. C. Hintz to H. L. Thompson dated June 28, 1985
2) Letter from C. W. Giesler to D. G. Eisenhut dated April 15, 1985
3) Letter from S. A. Varga to C. W. Giesler dated June 22, 1984

By letter dated June 28, 1985 we provided you with the Kewaunee Nuclear Power Plant Control Room Design Review Summary Report. The report provided a summary of the activities that were performed during the control room review and a summary of the results. The control room review was performed in accordance with the "Program Plan" which was submitted with reference 2 and accepted by reference 3.

As noted in reference 1, we committed to providing you with an update on the status of the design change activities on November 1, 1985. This letter provides the status update.

The DCRDR Summary Report summarizes the methodology and results of the control room human factors review. Included as Appendix A to the summary report is a compilation of the Human Engineering Observation (HEO) forms generated during the project. The HEO's were prepared by the evaluator to document the observations made and provide possible corrective action. The HEO forms were then reviewed by the Assessment and Improvement Team with a final review by management. These reviews provided a mechanism for receiving concurrence of the observation.

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Following concurrence the HEOs that were determined to be Human Engineering Discrepancies (HED) were forwarded to the Design Change Request (DCR) Group, Operations Group or Training Group depending on the proposed method of correction.

In an effort to ensure that changes proposed to the control room do not introduce other human factors concerns, we have organized a DCRDR Implementation Committee to process and prioritize all proposed modifications to the control room panels. The committee consists of personnel from the Operations, Design Change, Nuclear Services (Human Factors) and Licensing groups. Several committee members participated heavily during the DCRDR; therefore continuity will be maintained.

The main objective of the Implementation Committee is to review, group and prioritize the DCRs. The HEDs are then assigned to a DCR Implementation Group to complete the design process. It is important to realize that the HEO form only identifies the observation and a suggested corrective action. It is the responsibility of the DCR Implementation Group, through the normal design change process, to define the most effective functional design to implement the corrective action. Each DCR Implementation Group is assigned a group leader who will provide routine guidance and direction.

Support personnel are available to provide the necessary expertise and manpower during the design phase. Support personnel may serve on several DCR Implementation Groups and may provide expertise in the following areas:

a. Technical
b. Instrument and Controls
c. Computers
d. Operations
e. Human Factors
f. Licensing

As a result of the DCRDR it was determined that a formal methodology is necessary for implementing changes to the control room panels. A preferred methodology to determine the most effective corrective action/design is currently being written. The methodology will be followed by the DCR implementation group where possible to ensure that proposed design modifications will not introduce new human factors concerns.

The methodology is not yet finalized; however, in general, the implementation process can be summarized as follows:

1. Identify need for design change through observations, maintenance, regulatory requirements, etc.

2. Perform system function and task analysis which is intended to define a goal and determine information and control requirements and the human performance requirements.

3. Prepare alternative functional designs based on the system and task analysis.

4. Identify equipment that fulfills the functional requirements identified during the task analysis and incorporates the human factors criteria selected for application at the Kewaunee Nuclear Power Plant.

5. Incorporate the preliminary functional designs on a control board mockup.

6. Using the mockup, perform a design verification by performing operator walk and talkthroughs and determine the preferred design.

7. Install the selected design on the KNPP simulator.

8. Validate the design during operator training on the simulator. This allows an evaluation under dynamic real time conditions.

9. Install final design in the KNPP Control Room.

It is important to note that the implementation methodology requires input from several disciplines. The intent is to provide sufficient human factors review and operator input during the design phase prior to making any modifications to the control room panels. This methodology will provide assurance that all installed design changes do correct the original identified deficiency and that the corrective design does not introduce any new human factors concerns.

Currently we are working diligently at evaluating and grouping the associated Human Engineering Discrepancies. Once the final groupings are completed, a DCR implementation group will be established for each grouping of HEDs and will be responsible for implementing the design change process.

The purpose of the DCRDR was to perform a review of the control room and identify deficiencies for which corrective action is necessary. The DCRDR Summary Report (reference 1) provided the results of this review; therefore the DCRDR is considered complete. The HEDs identified during the DCRDR are now being implemented by the Design Change Group under our normal design change program as supplemented by the above mentioned implementation methodology. Scheduled implementation dates will be established by the design change group giving due consideration to other scheduled design and maintenance activities. Periodic DCR priority committee meetings are held to determine implementation priority. In most cases the implementation date cannot be established until after the final functional design is selected (step 7 of above mentioned methodology).

The originally submitted implementation dates (Table 6-2 of the Summary Report) assumed that some corrective actions were unique and would not affect other design changes. Scheduled implementation dates were therefore provided based on implementing the unique corrective action. As the grouping and prioritization activities proceed, we may find it necessary to revise some of the original implementation dates, due to previously unidentified related activities. As with any other activity at the Kewaunee Nuclear Power Plant, the NRC Resident Inspector is available to monitor and evaluate our implementation progress.

Wisconsin Public Service understands that implementing this methodology will require increased workload for our personnel and has the potential for signifi-

cantly increasing the installation time for final design; however, we feel that hastily installed corrective actions without adequate human factors and operations input may prove more detrimental to plant operation than a well thought out and coordinated implementation plan.

We feel that the above mentioned methodology will provide increased benefits in the future by ensuring that the KNPP control room is designed efficiently and continues to operate safely.

Sincerely,

D. C. Hintz
Manager - Nuclear Power

DSN/js

cc - Mr. S. A. Varga, US NRC
Mr. Robert Nelson, US NRC