

DUKE POWER COMPANY

P.O. BOX 33189
CHARLOTTE, N.C. 28242

HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

TELEPHONE
(704) 373-4531

February 20, 1984

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Ms. E. G. Adensam, Chief
Licensing Branch No. 4

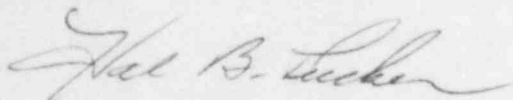
Re: Catawba Nuclear Station
Docket Nos. 50-413 and 50-414

Dear Mr. Denton:

Section 18.2 of the Catawba Safety Evaluation Report discusses Open Item 18, Control Room Design Review. My letter of February 7, 1984 provided a proposed schedule for implementation of the HED solutions.

After review of the HED solutions scheduled for completion between fuel load and the end of the first refueling outage, it was concluded that some improvements could be made in the HED implementation schedule. Attached is a discussion of the revised schedule. Since none of the identified HEDs were judged to have an adverse impact on the health and safety of the public, implementation of the identified HED solutions after fuel loadings is deemed acceptable.

Very truly yours,



Hal B. Tucker

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Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

NRC Resident Inspector
Catawba Nuclear Station

Mr. Robert Guild, Esq.
Attorney-at-Law
P. O. Box 12097
Charleston, South Carolina 29412

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cc: Palmetto Alliance
2135 1/2 Devine Street
Columbia, South Carolina 29205

Mr. Jesse L. Riley
Carolina Environmental Study Group
854 Henley Place
Charlotte, North Carolina 28207

CATAWBA NUCLEAR STATION
Revised HED Implementation Schedule

To reiterate, the schedule was developed after an extensive review of the HED solutions recommended for implementation. Following the requirements of Supplement 1 to NUREG-0737, this review carefully considered the significance of each HED, including the contribution of the HED solution to the reduction of risk and enhancement in the safety of operation, the difficulty of installing the HED solutions, the need for rewriting operating procedures and for retraining, and the coordination of HED solution changes with changes resulting from other improvement programs such as the SPDS, operator training, new instrumentation (Reg. Guide 1.97, Rev. 2), and upgraded emergency procedures.

The integration of the changes resulting from each of the NUREG-0737, Supplement 1 improvement efforts, as well as, the scheduling and coordination of individual HED solution changes is a complex and demanding scheduling effort which requires cognizance of the inter-relationships between each of the improvement areas, operator training requirements, and the plant status required for the implementation of each change.

The Duke Control Room Review Team, comprised of engineering personnel and operators from each of the three Duke nuclear stations, carefully assessed each HED and its solution during the scheduling effort. This assessment as stated considered the significance of HED, the difficulty of installing the solution, the coordination necessary with the installation of other HEDs and with changes from other review efforts, operator training requirements, and the need for procedure changes.

The schedule was developed following a policy of scheduling the completion of the more significant HEDs first, consistent with the practical constraints of installation such as design/installation time, material procurement, and the coordination with training and procedures. An arbitrary policy of completing minor changes with little significance before fuel load was not followed; rather, emphasis was placed on completing the more significant changes before fuel load. The remaining changes were scheduled to be completed between fuel load and the end of the first refueling outage. This scheduling method avoided impacting the completion of the more important items by those with small consequences.

An example of this philosophy is demonstrated in the scheduling before fuel load of the rearrangement of the steam generator controls on Control Board MC2. This change was considered by the Review Team to provide a significant improvement in the operation of this panel. The change required the welding and cutting of approximately 44 cutouts, the rearrangement and rewiring of 163 meters, switches, and controllers, and the rearrangement of the associated nameplates. In addition, several functions were added to this panel necessitating the pulling of several field cables; and the extensiveness of the changes required both a seismic review of the panel and a complete reworking of the separation barriers behind the panel.

Other changes scheduled for this period include changes such as the rearrangement of portions of the safety injection controls, ESF initiation switches, nuclear sampling system controls and auxiliary feedwater controls.

To facilitate the scheduling of HED solution changes, two classes of HED solutions were identified: (1) HED solutions which require physical changes and (2) HED solutions that can be accomplished with surface enhancements.

Most physical change solutions involve the rewiring, relocation, or addition of control and/or instrumentation components. The effective disablement of these components and of large sections of the Control Board during modifications, as well as the attendant cutting and welding needed, preclude the completion of most of this work while the systems involved are energized, such as during unit operation or testing. In addition, many physical solutions impact operator training and/or procedures, and require careful coordination in these areas.

Surface enhancement solutions generally do not involve the addition, rewiring, or relocation of control or instrumentation components. Some of the changes in this category include changes commonly referred to as "paint, tape, and label" or "PTL" changes. These "PTL" changes involve items such as the application of demarcation lines or the changing of nameplate engravings. These changes do not disturb instrumentation or control components and can, with proper safeguards, be installed while the systems involved are energized.

Other surface enhancements, however, while not requiring the rewiring, relocation, or addition of control or instrumentation components, do disturb these components. For example, the changing of a meter scale or meter legend plate requires the unwiring, removal, and dismantling of the meter to access the scale plate. Once the change is completed, a recalibration of the meter is required.

Obviously, this type of surface enhancement must be treated similar to a physical change, since the involved components cannot be energized or in use during the change.

The classification of the type of change, i.e. physical or surface enhancement, gives a rough approximation to the difficulty involved in the installation of the HED solution. However, the number of changes involved in the HED solution, the coordination of these changes with other changes being made, the impact on the completion of other changes, the coordination with operator training and procedures, and the benefit derived from the changes are important considerations that must be considered in the scheduling of HED solutions.

After review of the HED solutions scheduled for completion between fuel load and the end of the first refueling outage, we propose the following changes to Section II of Appendix D of our Control Room Review, Supplement to Final Report, Catawba Nuclear Station, Unit 1, dated, May 6, 1983:

I. Physical Changes

A. HED solutions to be completed prior to fuel loading

9	64	424B	437(P)*
30	68	429C	
42	416	584	

* The portion of this HED which involves the application of warning tape

B. HED solutions to be completed before exceeding 5% power

437(P)*

* The portion of this HED involving the capping of floor sleeve penetrations.

C. HED solutions to be completed by the end of the first refueling outage.

The following HED solutions require the rewiring or relocation of components and will be completed on a continuing basis as outage schedules permit during this period.

6	88	254	354	422H	505
8	89	273	355	424C	512
10	92	274	357	424F	526
14	102	283A	358	424G	532
19	104	283E	359	424H	
43	105	301	366	426	
45	108	324	371A	429B	
48	113	332	392	430	
52	124	343	422A	437(P)	
58	125	344	422B	457	
59	202	345	422D	468	
60	250	350	422E	469	
72	251	352	422F	470B	
79	253	353	422G	490	

II. Surface Enhancement Solutions

A. HED solutions to be completed prior to fuel loading

41	463	594
119	482	
446	509	

B. HED solutions to be completed prior to exceeding 5% power

These changes generally involve minor revisions to nameplates and labels for consistency in abbreviations and wording, minor improvements in demarcation and coding; and general "housekeeping" normally encountered in moving from the construction stage to the operational stage of a unit.

46	255	405(P)	522
80	378	411	534
207	390	413	
235	391	415	
238	400(P)	417	
241	403	495	

C. HED solutions to be completed by the end of the first refueling outage.

These HEDs involve component modifications to complete the surface enhancement changes as previously described. Several HEDs require the unwiring, removal, and disassembly of meters to complete meter scale changes. Other HEDs require the physical modification or change-out of a significant number of switches to complete the desired change. These changes will be completed on a continuing basis as outage schedules permit during this period.

32	361(P)	387
84	363	395(P)
117	367(P)	402
204	368	406
211	369	423
282	374	467(P)
338	379	
341	381	
348	382	

These HEDs involve nameplates on the Aux Shutdown Panels. However, these panels are being rearranged under other HEDs (273 and 371). HEDs 206 and 208 should be performed in conjunction with the control rearrangement.

206	208
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These HEDs involve the changing of recorder scales. However, a large scale rearrangement of recorder pens and scales is being done under HED 219 which involves the physical rewiring of a significant number of recorders. All of these HEDs should be performed in conjunction with 219. A careful coordination of these changes is required due to the work involved and the impact on operator training.

214 215 219 525

These HEDs add instrument channel identification tags for the benefit of maintenance personnel. Channels are currently shown on meters but will be changed from Roman numerals to arabic. These changes will be coordinated with individual meter scale/legend changes.

256 408 (P)

The above schedule reflects the revisions transmitted to the NRC staff on January 30, 1984. The following discussion describes those revisions (please refer to the letter from H. B. Tucker to H. R. Denton dated January 30, 1984):

(a) Section I (Physical Changes) - Delete HED 6, 14, 52

HED 6 requires procurement of a transmitter and square root extractor with lead times preventing implementation before fuel load.

HEDs 14 and 52 require modifications to vendor supplied equipment and must be coordinated through the vendor requiring a longer lead time than the fuel loading schedule permits.

These three HEDs have been rescheduled to be implemented by the end of first refueling (see (c) below).

(b) Section I (Surface Enhancements) - Add (P) for partial implementation to HEDs 367, 400, 405, 408.

During the NRC audit in August, 1983, the auditors noted that several HED modifications recommended for implementation were not included in the implementation schedule. In resolving this omission, it was also noted that the HEDs listed above did not include the partial indication as originally planned for grouping the work on a control board basis.

HEDs 400(P) and 405(P) are scheduled to be completed prior to exceeding 5% power as explained in Section II.B above. HEDs 367(P) and 408(P) are scheduled to be completed by the end of first refueling outage as explained in Section II.C. above.

- (c) Section II (Physical Changes) - Delete HED 429A (this HED is listed under Appendix C, HEDs not corrected)

- Add HED 457

These two changes corrected an error in the listing of 429A and the omission of 457

Note: HEDs 6, 14, and 52 should have been added to (c) but were inadvertently omitted in the January 30, 1984 letter.

- (d) Section II (Surface Enhancements)

- Delete HED 242 (this HED is covered by HED 80)
- Correct HED 238 between HEDs 341 and 361 to be HED 348
- Add HEDs 367(P), 400(P), 405(P), and 408(P)

These changes corrected a duplication of one HED solution and a typographical error. In addition, the portion of HEDs 367, 400, 405, and 408 moved from Section I were added (see (b) above).