

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

SN 157B Lookout Place 85 DEC 17 P 3: 57

December 9, 1985

WBRD-50-390/85-56  
WBRD-50-391/85-53

U.S. Nuclear Regulatory Commission  
Region II  
Attn: Dr. J. Nelson Grace, Regional Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

Dear Dr. Grace:

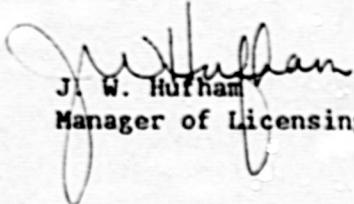
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - Q-LIST CONFORMANCE TO NQAM  
REQUIREMENTS - WBRD-50-390/85-56, WBRD-50-391/85-53 - INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector  
Al Ignatonis on October 24, 1985, in accordance with 10 CFR 50.55(e) as NCR  
W-269-P R1. Enclosed is our interim report. We expect to submit our next  
report on or about March 3, 1986.

If there are any questions, please get in touch with R. H. Shell at FTS  
858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

  
J. W. Hufham  
Manager of Licensing

Enclosure

cc (Enclosure):

Mr. James Taylor, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Record Center  
Institute of Nuclear Power Operations  
1100 Circle 75 Parkway, Suite 1500  
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ENCLOSURE  
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
Q-LIST CONFORMANCE TO NQAM REQUIREMENTS  
WBRD 50-390/85-56, WBRD 50-391/85-53  
NCR W-269-P R1  
10 CFR 50.55(e)  
INTERIM REPORT

Description of Deficiency

A number of programmatic and component/system-specific discrepancies have been identified in the Watts Bar Nuclear Plant (WBN) Quality Assurance List (Q-list) prepared by TVA's Office of Engineering (OE) and the Critical Structures, Systems, and Components (CSSC) Q-list (a special sort of the Q-list items) utilized by TVA's Office of Nuclear Power (NUC PR) for operations/maintenance/modification activities.

The description of deficiency for this condition has been separated into Part A, which addresses the programmatic portion of the nonconformance report (NCR), and Part B, which addresses the specific deficiencies identified in the NCR.

Part A

This portion of the report will address the following programmatic areas.

1. Nuclear Quality Assurance Manual (NQAM), Part V, Section 2.7, requires the Q-list to differentiate between safety-related and special feature equipment. The Q-list does not do this.
2. Various 1E valves are listed in the Q-list in columns not considered safety related; however, this is contradictory to the definition in NQAM, Part III, Section 2.1, definition number 6 for 1E.
3. The general notes to the WBN Q-list, part 2, are not consistent with NUC PR's approach to the 10 CFR 50 Appendix B program in that it has all safety-related items and special features in this program. Furthermore, it states "During plant design, three general safety functions have been identified which cause plant features to be safety related and require QA." If this were true, the special features which have safety functions should be considered safety related.
4. No motors are listed on the CSSC Q-list, only the pumps are. There needs to be more explanation on how to determine CSSC status for motors.
5. The Q-list notes are too general. This is because the Q-list notes discuss the OE quality assurance program implementation and not NUC PR's. (For example, in the area of conduit and cable trays, the notes say the item "is" or "is not" in the quality assurance program; but it does not indicate if the items are CSSC. Also, similar examples can be found in the "Civil Structures" section.)

The above deficiencies involve the overall Q-list program and require an assessment of the programmatic aspects of this condition. These deficiencies were identified by TVA personnel during the initial phases of CSSC Q-list use. Items 3, 4, and 5 resulted from inadequate input/review/coordination during the preparation/review of the Q-list. Items 1 and 2 are the result of the imposition of recently issued TVA requirements (i.e., the NQAM issued after the initial issuance of the Q-list).

This condition is not generic since WBN is currently the only TVA plant which has implemented a CSSC Q-list for operations/maintenance activities. TVA's SQN plant has a Q-list, but it currently is not used for operation/maintenance activities. The BFN Plant has a CSSC Q-list, but it is not based on a Q-list similar to that developed by OE for WBN. BLN is not affected since the BLN Q-list clearly identifies equipment that is safety related and no CSSC Q-list has been generated to date.

#### Part B

This portion of the report will address the following specific deficiencies.

1. System 70 - The CCS heat exchangers, surge tanks, and flex hose assemblies are safety related, but they are not included on the CSSC Q-list.
2. System 63 - Class D piping is safety related, but it was omitted from the Q-list and the CSSC Q-list.
3. System 82 - The diesel generators were inappropriately listed in system 18 (fuel oil).
4. Systems 30 and 31 - Equipment was mixed between the systems (i.e., system 30 items in system 31 and vice versa).
5. System 63 - Instrument PI-63-9 was erroneously listed as being 1E on the Q-list. This is a local gauge.
6. System 70 - Class G piping is erroneously listed on the CSSC Q-list.
7. System 63 - FCV-63-187 and -188 were erroneously included on the CSSC list.
8. System 62 - FE-62-49 and FIT-62-29 were erroneously included on the CSSC Q-list. Also, XS-62-137 needs to be evaluated to determine whether it is safety related.
9. There are unit 2 valves omitted from the CSSC Q-list for which their unit 1 counterpart was included and vice versa.
10. Items are included on the CSSC Q-list that appear not to be CSSC.

11. Systems 62 and 63 - Heat trace is not on the CSSC Q-list.
12. System 82 - Various valves are included on the CSSC Q-list which do not appear to be CSSC.
13. System 79 - This system is not included in the CSSC Q-list but it has listings under "RTR SD" (reactor shutdown) on the Q-list that should have been picked up on the computer sort.
14. System 77 - This system has listing in the CSSC Q-list that are not clear and it is questionable if these listings should be in the CSSC Q-list.
15. There are 1E valves in the Q-list not designated as 1E in the Special Requirements (SP REQ) column (example: FCV-3-33A).
16. The electrical single lines and the CSSC Q-list do not always agree.
17. Class G piping for systems 3, 32, 63, and 67 was erroneously included on the CSSC Q-list.

The above items involve specific deficiencies identified by TVA personnel during the initial phases of CSSC Q-list use. These deficiencies are the result of Q-list errors, CSSC Q-list sort criteria, and/or differences in interpretation of Q-list information.

The nonconservative deficiencies (see "Safety Implications," Part B below) are not considered generic to other Q-list systems or to other TVA plants.

### Safety Implications

#### Part A

The programmatic concerns of this deficiency could result in inadequate quality assurance controls during operation/maintenance/modification activities. This lack of quality assurance control could result in degradation of safety systems. As such, the programmatic aspects of this deficiency could have jeopardized the safe operation of the plant had they remained uncorrected.

#### Part B

In order to adequately address the safety implications of the specific deficiencies, the items must first be categorized according to the characteristics of each deficiency. The categories utilized are (1) conservative, (2) nonconservative, and (3) nondeficiencies. Below is a tabulation using the item numbers in Part B of the "Description of Deficiency."

1. Conservative (items with no safety implications) - Items 5, 6, 7, 8, 10, 12, 14, and 17.
2. Nonconservative (items with safety implications) - Items 1, 2, 3, 4, 13, 15, and 16.
3. Nondeficiencies (items with no safety implications) - Items 9 and 11.

The nonconservative deficiencies could have resulted in inadequate quality assurance controls during operation/maintenance/modification activities. These inadequacies could result in a degradation of a safety system, thus jeopardizing the safe operation of the plant. The safety systems affected are (1) component cooling system, (2) safety injection system, (3) ventilation system, (4) air-conditioning system, (5) fuel handling and storage system, and (6) standby diesel generator system.

#### Corrective Action/Interim Progress

##### Part A

TVA is evaluating alternatives for resolving the programmatic deficiencies. The results of this evaluation and schedule for completion of corrective action will be provided to the NRC by March 3, 1986.

##### Part B

Categories 1 and 3 defined in the "Safety Implications" have been evaluated and determined not to have any adverse safety implications, therefore, they will not be considered a part of the reportable aspect of this deficiency. The deficiencies identified in category 2 do have adverse safety implications and are discussed in the following paragraphs.

Below is an item-by-item discussion of each nonconservative, specific deficiency.

- Item 1 - The Q-list, system 70, has been revised to indicate all the appropriate functional requirements (i.e., seismic category 1). This change is complete and is documented in engineering change notice (ECN) 5810.
- Item 2 - The Q-list, system 63, has been revised to include class D piping. This change is complete and is documented in ECN 5810.
- Item 3 - The diesel generators have been deleted from system 18 and added to system 82. This change is complete and is documented in ECN 5810.
- Item 4 - The Q-list has been revised to include the ventilation/air-conditioning coolers in the appropriate system. This change is complete and is documented in ECN 5810.

Item 13 - Corrective action for this item is currently being evaluated. We expect to complete our evaluation and inform the NRC of the results by March 3, 1986.

Item 15 - Corrective action for this item is currently being evaluated. We expect to complete our evaluation and inform the NRC of the results by March 3, 1986

Item 16 - Corrective action for this item is currently being evaluated. We expect to complete our evaluation and inform the NRC of the results by March 3, 1986.

In order to ensure that safety systems have not been adversely impacted by the above item specific deficiencies, TVA will review maintenance and modification activities since January 1, 1985, to determine the adequacy of quality assurance controls. The results of this review will be evaluated and presented in our next report to the NRC on this condition by March 3, 1986.