



Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

September 29, 1997

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

Gentlemen:

In the Matter of)
Tennessee Valley Authority)

Docket No. 50-259

**BROWNS FERRY NUCLEAR PLANT (BFN) - UNIT 1 - RESPONSE TO NRC
REQUEST REGARDING IMPLEMENTATION OF MAINTENANCE RULE, 10 CFR
50.65 (URI 50-259/97-04-01) (TAC NO. M98931)**

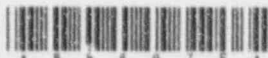
This letter responds to NRC's letter dated July 30, 1997, regarding implementation of the Maintenance Rule for Unit 1. In this letter, the staff concluded that the scope of the Unit 1 Maintenance Rule Program is not consistent with the requirements of the rule. The letter stated that TVA has three apparent alternatives:

1. Revise the scope of the Maintenance Rule monitoring program for Unit 1 to include structures, systems and components as specified in paragraph (b) of the rule, or
2. Submit a written certification to the NRC as specified in 10 CFR 50.82(a)(1) that TVA has determined to permanently cease BFN Unit 1 operations, or
3. Petition the NRC for an exemption from the requirements of the rule that are not currently being met.

The staff requested TVA to describe which of the three alternatives it considers to be applicable or propose another course of action that it believes satisfies the Maintenance Rule. //

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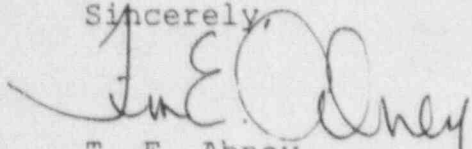
TVA developed a program for Unit 1 that was designed to comply with the Maintenance Rule. TVA continues to believe that the program to implement the Maintenance Rule for Unit 1 complies with 10 CFR 50.65. TVA used a methodology for the Unit 1 program that varies slightly from the methodology endorsed by the staff in Regulatory Guide 1.160. The regulatory guidance is intended to provide flexibility for a licensee to structure its maintenance program in accordance with the safety significance of those structures, systems, and components within the scope of the rule. Regulatory guides are issued to describe methods acceptable to the NRC staff for implementing specific parts of the Commission's regulations. Regulatory guides are not substitutions for regulations and compliance with regulatory guides is not required. TVA's methodology is appropriate given the unique regulatory and operating status of Unit 1.

The Enclosure provides the basis for TVA's position that the methodology used for the Maintenance Rule Program for Unit 1 is appropriate and consistent with the regulations. The Enclosure also addresses each of the three alternatives given in the staff's July 30, 1997 letter.

TVA respectfully requests that NRC consider the additional information regarding the alternate methodology used by TVA and reconsider its conclusion regarding the application of the Maintenance Rule Program for Unit 1.

There are no commitments contained in this letter. If you have any questions please contact me at (205) 729-2636.

Sincerely,



T. E. Abney
Manager of Licensing
and Industry Affairs

Enclosure

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Enclosure

cc (Enclosure):

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ENCLOSURE
TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNIT 1

RESPONSE TO NRC REQUEST REGARDING
IMPLEMENTATION OF THE MAINTENANCE RULE, 10 CFR 50.65

Background

NRC conducted an inspection of the implementation of the Maintenance Rule at Browns Ferry on April 14-18, 1997. The results of the inspection were documented in NRC Inspection Report 50-259/97-04, 50-260/97-04, and 50-296/97-04, dated May 21, 1997. The inspection report concluded that the program was comprehensive and was effectively implemented. The inspection team reviewed the actions to implement the Maintenance Rule on Unit 1 and concluded that the actions were technically adequate; however, the team identified one Unresolved Item (URI). The URI concerned the application of the Maintenance Rule for Unit 1. In a letter to TVA dated July 30, 1997, the staff concluded that the scope of the BFN Maintenance Rule Program for Unit 1 is not consistent with the requirements of the rule. This letter further stated that TVA has three apparent alternatives:

1. Revise the scope of the Maintenance Rule monitoring program for Unit 1 to include structures, systems and components as specified in paragraph (b) of the rule, or
2. Submit a written certification to the NRC as specified in 10 CFR 50.82(a)(1) that TVA has determined to permanently cease BFN Unit 1 operations, or
3. Petition the NRC for an exemption from the requirements of the rule that are not currently being met.

The staff requested TVA to describe which of the three alternatives it considers to be applicable or propose another course of action and discuss why it considers that option to be consistent with regulatory requirements.

TVA Response

TVA does not believe that the selection of any of the above-enumerated alternatives is warranted since TVA's program to implement the Maintenance Rule for Unit 1 is in compliance with 10 CFR 50.65.

The following provides the basis for TVA's position that the Maintenance Rule Program for Unit 1 is in compliance with 10 CFR 50.65 and further addresses each of the three alternatives given in the staff's July 30, 1997 letter.

Unit 1 Status

Browns Ferry Units 1 and 3 were shut down by TVA in March 1985 to address questions about containment leak rate testing on Unit 1 and reactor water level instrumentation on Unit 3. Unit 2 was in a refueling outage at that time. Additional questions were subsequently raised by the NRC regarding the overall adequacy of TVA's nuclear program. By letter dated September 17, 1985, NRC requested, pursuant to 10 CFR 50.54(f), that TVA specify the corrective actions to be completed prior to restart of any of its operating facilities. This letter also confirmed TVA's verbal commitment not to restart any of TVA's operating units without prior NRC approval. TVA responded for BFN with the Corporate Nuclear Performance Plan and the Browns Ferry Nuclear Performance Plan which addressed a number of actions to be taken to resolve management, equipment and regulatory issues prior to restart of BFN Unit 2. Extensive recovery activities for Unit 2 were undertaken to resolve the problems identified by NRC and TVA and Unit 2 was subsequently restarted in 1991.

By letter dated July 10, 1991, TVA submitted its proposed regulatory framework for the restart of Units 1 and 3. This letter provided the proposed scope of programs to meet regulatory requirements, implement commitments, improve technical specifications, address open corrective actions, and resolve internally identified problems prior to the restart of Units 1 and 3. This letter also addressed differences in the proposed programs that were used for the recovery of Unit 2. By letter to TVA, dated April 1, 1992, the staff concurred with the scope of the plans provided by TVA. Using this regulatory framework as a basis, Unit 3 was recovered and restarted in 1995.

Unit 1 was defueled in late 1985 and remains in a defueled condition. The unit is on administrative hold to resolve regulatory concerns and there are currently no plans to restart it. Unit 1 systems that perform a required function in the defueled condition or that directly support Unit 2 or Unit 3 operation are being operated and maintained under applicable technical specifications and plant programs.

The Unit 1 systems and components which are not required to be operational have typically been drained, deenergized, disassembled, and placed in dry lay-up under a formal lay-up program. The intent of this program is to preserve TVA's investment if recovery of Unit 1 is pursued in the future. The

lay-up program is described in plant procedures and includes periodic monitoring of equipment condition. Plant systems included in the lay-up program include both safety-related systems and non-safety-related systems. Where applicable, the lay-up program requires use of forced air drying, desiccants, nitrogen blankets, periodic motor rotations, and motor insulation resistance testing to ensure that equipment is adequately preserved. The lay-up program requires periodic visual corrosion inspections, relative humidity checks, desiccant inspections, and oil analyses to monitor program effectiveness. Actions are also specified (e.g., eddy current testing of heat exchangers) to assess the effectiveness of lay-up prior to return to service. The most recent inspection of the program by the staff was documented in Inspection Report 50-259/96-12, 50-260/96-12, 50-296/96-12 dated December 20, 1996. The staff concluded that the lay-up program and its implementation were acceptable.

One of the special programs listed in TVA's July 10, 1991 letter concerning the regulatory framework for Units 1 and 3 restart is the Restart Test Program. This extensive test program (implemented on both Units 2 and 3) will verify that Unit 1 systems will perform their safe shutdown function. The staff safety evaluation report for the Unit 3 Restart Test Program, dated August 30, 1994, concluded that the Unit 3 program provided adequate assurance that safety systems could fulfill their safe shutdown functional requirements and support the safe return to operation of Unit 3. For Unit 1, the Restart Test Program will likewise provide adequate assurance that Unit 1 systems are capable of performing their safe shutdown functions after the extended outage, if recovery of Unit 1 is pursued.

TVA has not reached a decision on the long term operational status of Unit 1. However, there are no current plans for equipment refurbishment or recovery activities to be conducted on the unit. TVA has previously stated that NRC will be notified of any decision to return Unit 1 to operation. TVA has also committed to implement the same programs employed for the Unit 3 recovery effort and not to restart Unit 1 without prior NRC approval.

Unit 1 is in a unique regulatory position. It is on administrative hold with extensive corrective actions, commitments, and regulatory requirements (including NRC approval of restart) to be met prior to return to service. There has been considerable correspondence with NRC regarding Unit 1, including establishing the regulatory framework for its restart if it is ever pursued. Based on the regulatory framework and the Unit 2 and Unit 3 precedents, there will be considerable NRC oversight of any future recovery efforts of Unit 1.

Unit 1 Maintenance Rule Compliance

10 CFR 50.65(b) states that the scope of the monitoring program is to include safety-related and non-safety-related structures, systems, and components (SSCs) as follows:

1. Safety-related SSCs that are relied upon to remain functional during and following design basis events to ensure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, and the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the 10 CFR part 100 guidelines.
2. Nonsafety-related SSCs:
 - i. That are relied upon to mitigate accidents or transients or are used in plant emergency operating procedures (EOPs); or
 - ii. Whose failure could prevent safety-related structures, systems, and components from fulfilling their safety-related function; or
 - iii. Whose failure could cause a reactor scram or actuation of a safety-related system.

For BFN Unit 1 in its current defueled status, most of the Unit 1 SSCs are not required to perform the functions required to be monitored by 10 CFR 50.65(b) and cannot perform these functions due to the lay-up status of the unit. This status was appropriately recognized and factored into the scoping of Unit 1 SSCs for the Maintenance Rule Program.

NRC Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants" was issued to provide guidance to meet the requirements of the rule. NRC Regulatory Guide 1.160 Revision 2, dated March 1997, endorsed NUMARC 93-01 Revision 2, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants". Regulatory Guide 1.160, Revision 2, states in Section 1.10 that licensees may use other methods to meet the requirements of the rule but NRC will determine the acceptability on a case-by-case basis.

TVA used a slightly different methodology from that described in NUMARC 93-01 to determine the scope of Unit 1 SSCs included in the program. This methodology considered the unique status of Unit 1 and the functions required to be performed by the Unit 1 SSCs in the current status.

As part of the alternate scoping methodology, each Unit 1 SSC was evaluated for its required function for the Unit 1 defueled

status as well as its functions in support of Units 2 and 3. Unit 1 systems which have a required safety function in the defueled condition or perform a function required for Unit 2 or Unit 3 were scoped into the Maintenance Rule Program. This is documented for each Unit 1 system in the plant Maintenance Rule implementing procedure, Technical Instruction-346. Using this methodology, some Unit 1 SSCs were not included in the scope that would otherwise have been required if the unit was in an operational status. As a result, the program as defined by Technical Instruction-346 explicitly requires that if the status of Unit 1 changes, then the scoping must be reevaluated.

The following Unit 1 systems or portions of systems were included in the scope of the program:

- Raw Cooling Water
- CO2 Storage, Fire Protection, and Purging
- Liquid Radwaste
- Control Rod Drive
- 480 Volt AC Shutdown Boards
- 120 Volt AC I&C Bus
- 480 Volt AC RMOV Boards
- 250 Volt DC RMOV Boards
- Security (structural aspect of doors)
- Fuel Pool Cooling and Cleanup
- Reactor and Refuel Zone Ventilation
- Radiation Monitoring
- Standby Liquid Control
- Residual Heat Removal
- Reactor Building Closed Cooling Water

The scoping performed for Unit 1 used an alternate methodology from that described in NUMARC 93-01 based on the unique status of the unit. This methodology is fully consistent with the safety purpose and intent of the Maintenance Rule. As such, monitoring of Unit 1 SSCs under the scope of the rule has been established with recognition of the current plant status.

This alternate methodology does not infer, and TVA fully recognizes, that the rule does not intend that utilities change scope based on normal shutdowns envisioned throughout the life of the plant (e.g., refueling outages or long-term maintenance outages). Accordingly, the alternate methodology used for Unit 1 is fully appropriate given its long-term shutdown status on administrative hold, the fact that there are currently no plans to restart the unit, and the commitments and agreements previously reached with the NRC regarding Unit 1 restart as described above.

Regulatory Alternatives Proposed By NRC

The applicability of each of the three alternatives proposed by the staff in the July 30, 1997 letter is discussed below:

1. Revise the scope of the Maintenance Rule monitoring program for Unit 1 to include structures, systems, and components as specified in paragraph (b) of the rule.

As described above, all Unit 1 SSCs which perform a function specified in paragraph (b) of the rule in the current plant status are included in the Unit 1 Maintenance Rule monitoring program. There are some Unit 1 SSCs which were not determined necessary to be included in the scope of the program that would be included if the unit were operating. The functions that these SSCs perform in the current plant status are not required as the design basis events for which they are designed to function cannot occur. These systems are typically in lay-up and cannot perform their design function. Therefore, performance criteria related to their design function cannot be established and monitoring the performance or condition against such criteria cannot be done. As a result, the purpose of the rule would not be met by including these systems into the scope of the program in the current plant status. Therefore, application of this alternative is unnecessary.

The current scope of systems included in the Unit 1 Maintenance Rule Program is appropriate for the current plant status. This fact, coupled with the requirement in the program that the scope be reevaluated if the plant status changes, results in a program that is and will remain in full compliance with the rule.

2. Submit a written certification to the NRC as specified in 10 CFR 50.82(a)(1) that TVA has determined to permanently cease BFN Unit 1 operations.

TVA has not decided to permanently cease operations of BFN Unit 1.

3. Petition the NRC for an exemption from the requirements of the rule that are not currently being met.

The rule does not explicitly define a methodology to determine the scope of the SSCs included in the Maintenance Rule Program. As stated above, an alternate methodology to that endorsed by Regulatory Guide 1.160 was used to define the scope of Unit 1 SSCs included in the program. The program requires reevaluating the scope of Unit 1 SSCs if

Unit 1 recovery is ever pursued so that continued compliance with the rule is ensured. This alternate methodology results in a program that meets the requirements of the rule for Unit 1 given its current status. The NRC has already determined that the program for Unit 1 is technically adequate in NRC Inspection Report 50-259/97-04, 50-260/97-04, and 50-296/97-04. Therefore, an exemption to the rule is not warranted.

TVA has considered whether the unique status of the unit warrants an exemption request to specifically address the Unit 1 SSCs that would otherwise be required to be in the scope of the rule if the unit were operating. It was determined, however, that such an approach would be inconsistent with the methodology used by TVA to implement the requirements of the Maintenance Rule. As discussed above, the design basis events for which these SSCs are designed to mitigate cannot occur in the current plant status. Therefore, there is no risk to the health and safety of the public associated with excluding these SSCs from the scope of the monitoring program at this time. This is especially true given the requirement that the scope be reevaluated if the status of Unit 1 changes. Since it has already been determined by the staff that the actions taken by TVA are technically adequate, there would be no safety benefit in pursuing an exemption. Further, the Maintenance Rule was developed and has evolved to both a performance-based and risk-informed regulation, allowing utilities flexibility to utilize logical judgments in applying requirements in a meaningful manner commensurate with risk.

Requesting an exemption when the intent is both purposefully and technically satisfied would be a costly and inefficient use of TVA and NRC resources which could better be applied to safety-significant issues.

Conclusion

TVA is in compliance with the rule for Unit 1 given its unique status. The alternate methodology to that endorsed by Regulatory Guide 1.160 used by TVA meets the requirements of the rule for the current plant status. Program controls are in place to ensure that the requirements of the rule will continue to be met. This alternate methodology meets the purpose and intent of the rule and poses no risk to the health and safety of the public.

TVA believes that no additional actions are required on this matter. TVA respectfully requests that the staff reconsider its conclusions on the TVA Maintenance Rule Program for Unit 1 based on the additional information provided in this Enclosure.