

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE REGION II
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ATLANTA, GEORGIA

January 18, 1982 0
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Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - NRC-OIE REGION II INSPECTION
REPORT 50-390/81-14, 50-391/81-14 - SUPPLEMENTAL RESPONSE TO VIOLATIONS

The subject inspection report dated November 5, 1981 cited TVA with three Severity Level V violations and two Severity Level IV violations in accordance with 10 CFR 2.201. TVA's response to these violations was submitted on December 7, 1981.

In a subsequent telephone conference call between NRC and TVA held on December 16, 1981, Inspectors D. Quick and J. McDonald expressed concern about our December 7, 1981 response. Our enclosure addresses those concerns.

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

To the best of my knowledge, I declare the statements contained herein are complete and true.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills
L. M. Mills, Manager

Nuclear Regulation and Safety

Enclosure

cc: Mr. Richard C. DeYoung, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE

WATTS BAR NUCLEAR PLANT
RESPONSE TO VIOLATIONS

NRC's Concern No. 1

Address the apparent lax attitude demonstrated by personnel when interfacing with other TVA organizations. This concern was expressed in page 6 of the inspection report details. Although TVA's response addresses correcting the performance of the test directors, it was felt by NRC that the test directors were following instructions from their management and that the attitude and actions of TVA management should be investigated.

TVA's Response

This concern is addressed in paragraphs 5.e.(1).(b) and 5.e.(1).(c) on page 6 of the inspection report details. The root cause of the problems addressed in these paragraphs appears to be a combination of (1) the lack of a positive attitude and cooperative approach, (2) the lack of a clear definition of authority, responsibility, and accountability, and (3) a failure to follow procedures. Both paragraphs of concern are specifically addressed below.

5.e.(1).(b)

ID-QAP-1.2, "Transfer of Construction and Engineering Responsibilities," states that TVA's Division of Nuclear Power (NUC PR) will assume operation and maintenance responsibility for transferred plant features. Normal flushes are performed on systems before transfer from Construction per QCT-4.36, "General Procedure for Preoperational Cleaning and Flushing of Fluid Handling Systems and Components." The underlying reason for the problems associated with the flush of the Safety Injection System was that this was a reflush on a system previously flushed and subsequently transferred to NUC PR (operations). This was the first reflush performed on a tentatively transferred system and was required by system rework.

It was an assumption on the part of the Construction Startup, Test, and Coordination (ST&C) Supervisor and test directors that if NUC PR had operational responsibility then their system operating instructions would contain the operating parameters to be monitored. Thus, he assumed that operating parameters were not to be included in construction test procedures. The ST&C Supervisor now recognizes that this was a bad assumption; and, effective August 3, 1981, he has directed all of his test directors to input operating parameters into all flush procedures.

As a result of the lack of specific organizational responsibilities, neither organization assumed overall responsibility. This was a unique situation which had not been previously addressed in the flushing program but which has now been corrected.

5.e.(1).(c)

NUC PR has conducted a shift engineers' meeting to restress the following:

Scheduling requirements do not take precedence over safety considerations.

Equipment will not be operated outside the established operating limitations as specified in the procedures controlling the test activity.

Operating parameters are to be monitored by means of test or installed instrumentation. The shift engineer is responsible for suspending operation of equipment whose operating parameters cannot be verified to be within prescribed limits.

In both of the instances above, TVA management has recognized weaknesses in the described areas and has taken positive action to correct the problems. As stated above, TVA management has emphasized the proper approach to their employees.

NRC's Concern No. 2

Paragraph 5.f of the inspection report details addressed several areas which were not included in TVA's response. The most significant aspect of this involved a discussion of a previous investigation by TVA into irregularities of CCP operation. The investigation did not prevent pump damage. Therefore, TVA should address the system used for investigating failures.

TVA's Response

The cause of each of the problems outlined in paragraph 5.f is the failure to follow established procedures. Each item in paragraph 5.f is addressed below.

5.f(a)

The initial flush of the Safety Injection System and the particulate samples taken verify that foreign material was not present after the initial flush. Preoperational test W3.1, which was performed after the initial cleaning operation, further demonstrated that foreign material was not present.

However, the system underwent modifications subsequent to the preoperational test which could have resulted in the presence of foreign material.

The purpose of the practice of reflushing systems which undergo modification after initial flushing is to remove any foreign material that may be present as a result of rework.

TVA installed strainers on the suction side of the pumps, but failed to detect blockage of the strainers.

Therefore, TVA does not feel that foreign material exists in portions of other systems cleaned by gravity flushes.

5.f(b)

Flushing is normally one of the last tests performed on a system before transferring it to NUC PR.

After transfer, all openings or rework of a system is controlled through a workplan which specifies either a visual inspection or a reflush. The responsibility of whether reflushing is required is shared jointly by Construction and NUC PR as both review and approve the workplan.

Maintenance activities by NUC PR also include requirements for a visual inspection to ensure cleanliness before restoring the system to its operational configuration.

The procedures described above are adequate to detect and eliminate foreign material in safety-related systems.

5.f(c)

Engineering Design efforts in prescribing the selection of motive force for flushing and the control of flush velocity are adequately implemented in the following requirements:

General Construction Specification G-39, "Cleaning During Fabrication of Fluid Handling Components," - in Section 8.4.4, "Velocity of Flushes," recommends flush velocity as ". . . equal to or slightly greater than normal operating flow rate . . ."

N3M-890, "Chemical Cleaning Instructions for Piping Systems for Watts Bar Nuclear Plant," specifies the selection of motive force to be used in the flushing of individual systems as well as system operating limitations and cleanliness requirements.

The protection of safety-related pumps during flushing is addressed in the specification of operating limitations specified in construction test procedures and in the monitoring of operating limitations by operations personnel.

5.f(d)

Specific test procedures are prepared by Construction under guidelines and requirements specified in General Construction Test Procedures which are reviewed and approved by Construction, the design organization, quality assurance, and NUC PR.

NUC PR personnel review and approve specific test procedures before implementation. In the course of this review, they check valve alignment, flow paths, water quality, and adequacy of specified instrumentation to monitor operating parameters. They may recommend changes to procedures under review and also recommend revisions to procedures in the course of testing.

The Construction Startup, Test, and Coordination Supervisor has assigned an engineer the responsibility for reviewing flushing procedures for all systems to ensure consistency and comprehensive coverage of requirements. This is to occur before review of the procedure by other organizations in construction, operations, and quality assurance.

The process of procedure preparation, review, and approval described above provides reasonable assurance that test procedures are adequate for both Construction and NUC PR.

5.f(e)

TVA's program for addressing vendor recommendations and assuring inclusion in sub-tier documents when appropriate is embodied in the following:

Engineering Procedure 4.04, "Handling of Squadchecks," Section 4, "Procedure for Vendor Documents," which details the method of review by design engineers of vendor documents.

Engineering Procedure 4.25, "Design Review and Interface Coordination of Detailed Construction and Procurement Drawings," which details the methods employed by design engineers in incorporating vendor information into detailed construction drawings and specifications.

The Construction Requirements Manual, which lists vendor manuals, specifications, and drawings used as the basis for acceptance criteria for construction activities.

This program, which covers both design and construction activities, is adequate to fulfill TVA's commitments. The cited example involves the failure to adhere to established procedures.

5.f(f)

The Construction system for investigating failures is contained in the mechanism for resolving Nonconforming Condition Reports, which requires that corrective action and action to prevent recurrence be determined in the course of investigating the deficiency.

Construction is in the process of revising Quality Control Instruction 1.2, "Control of Nonconforming Items," to place additional emphasis on the identification of root causes of deficiencies. This revision will more adequately emphasize the purpose of action to prevent recurrence, the relationship of the action to prevent recurrence to the basic problem, documentation requirements, and timeliness.

NUC PR conducted a formal investigation into the events leading to the failure of the charging pump, which consisted of:

- interviews
- review of operating logs
- histories of equipment operation
- a detailed determination of the failures
- replacement action
- research of failure cause
- consequential actions
- conclusions
- actions taken to prevent future similar problems

The end results of this investigation were the program for "Certification of Assistant Unit Operators" discussed in Response No. 3 and the shift engineers' meeting discussed in Response No. 1. These constituted the generic corrective actions resulting from the investigation.

NRC's Concern No. 3

Part 4 of Violation D addressed an apparent deficiency of the unit operator's knowledge of the system configuration. However, TVA's response dealt solely with certification and training of assistant unit operators. TVA should address the violation as described in the inspection report.

TVA's Response

In TVA's initial response to this deficiency, we outlined the program for "Certification of Assistant Unit Operators," which was intended to relay the fact the Unit Operators, who direct the efforts of Assistant Unit Operators, do have at their disposal accurate information to monitor and evaluate factors ensuring the safe operation of equipment. In addition to information provided by better trained Assistant Unit Operators, the Unit Operators are now required to monitor operating parameters by the means specified in the specific test procedure.