Docket Nos.: 50-390, 50-391

28 JUL 1986

LICENSEE: Tennessee Valley Authority

FACILITIES: Watts Bar Nuclear Plant, Units 1 and 2

SUBJECT: SUMMARY OF MEETING WITH TVA CONCERNING CABLE PULLING AT WATTS BAR

On July 17, 1986, the NRC staff and NRC consultants (hereafter referred to as the staff) met with TVA to discuss cable pulling at Watts Bar. The staff stated that the purpose of this meeting was to gather information on cable pulling and not to draw conclusions. Meeting attendees are listed in Enclosure 1.

TVA presented an overview of their sidewall pressure test report. The purpose of the report was to determine the effects of excessive sidewall bearing pressure on electrical cables by applying various pulling tensions to the cables in a conduit test setup. TVA indicated that they will formally transmit their sidewall pressure test report in a couple of weeks. Following a discussion of the sidewall report, the staff asked questions regarding cable lubrication, pull problems, pull-bys, inspections, splicing, testing, mixed pulls, bending radii, harsh environments, monitoring programs, conduit conditions and generic implications (See Enclosure 2). Each question generated a discussion as a result of followup questions and comments from the staff. At the conclusion of the meeting, the staff indicated that a formal question list will be sent to TVA which will be similar to Enclosure 2, but will contain more focused questions and some additional questions as a result of this meeting.

On July 18, 1986, the staff toured Watts Bar, Units 1 and 2. The tour consisted of looking inside the pull boxes or termination areas of eight conduits in Unit 1. Also included in the Unit 1 tour was a manhole associated with the diesel generator power cables, several conduit configurations, and many cable tray layouts. The tour of Unit 2 focused on conduit inside containment. Prior to the tours, the staff spoke with several TVA employees who are involved with cable pulling at Watts Bar. Most of the questions the staff asked concerned lubrication of the cables.

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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Enclosure 1

NRC/TVA Meeting On Cable Pulling At Watts Bar

July 17, 1986

NAME	ORGANIZATION
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J. Knight	NRC
G. Toman	Franklin Research Center
J. Gardner	Consultant
W. Thue	Consultant
M. Hunt	NRC
T. Gibbons	NRC
J. Ziegler	TVA
J. Hartley	TVA
V. Kaminsky	TVA
M. Brandon	TVA
R. Burch	TVA
D. Faulkner	TVA
G. Owens	TVA
L. Ottinger	TVA
A. Little	Stone & Webster
J. Collins	TVA
R. Williams	TVA
T. Shea	Stone & Webster
T. Hughes	TVA
C. Sudduth	TVA
W. Raughley	TVA
K. Petty	Stone & Webster
G. Frye	TVA

Enclosure 2

Topics for Discussion

1. On tough pulls, is it known that the cables were lubricated?

2. a. Describe the basis for determining which of the 10,400 conduits were pull problems.

   b. Did the determination of problem pulls include consideration of pull-bys (i. e., pulling of new cable through partially filled conduits)?

   c. In the case of pull-bys, were cable materials and constructions considered (i. e., were non-compatible cables pulled past each other)?

   d. Did any of the 12 "worst" case conduits include pull-bys of various size and construction cables?

   e. Were multi-cable conduit pulls with mixes of cable sizes and constructions evaluated for stresses resulting from the pulls?

3. Have any of the cables suspected of having a problem been removed and inspected.

4. a. Are spliced or repaired cables tested after repair?

   b. Are such repairs allowed to be pulled into conduits?

5. What in-situ testing has been done to the cables routinely or subsequent to the issues of abuse?

6. What classes or types of cables are mixed in a given conduit or tray or in a given pull?

7. In the case of bending cables beyond the minimum allowable bend radii, were the areas adjacent to the bends inspected for stress or deformation that could increase with age?

8. Are the 1914 conduits that could have problems in harsh environment areas? Are they subject to high moisture, flooding, or steam conditions during normal or accident conditions?

9. Has TVA considered a monitoring program for any of the cables suspected of having problems?

10. Were conduits known to be clean and obstruction-free prior to pulls.

11. What are the generic implications for Sequoyah and other TVA facilities?

MEETING SUMMARY DISTRIBUTION

Docket File
NRC PDR
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NSIC
PRC System
PWR#4 Reading File
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