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Docket Nos. 50-390
and 50-391

Mr. H. G. Parris
Manager of Power
Tennessee Valley Authority
500A Chestnut Street Tower II
Chattanooga, Tennessee 37401

Dear Mr. Parris:

SUBJECT: INSERVICE INSPECTION OF PRESSURE ISOLATION VALVES
(Watts Bar Nuclear Plant, Unit Nos. 1 and 2)

As a result of our review of your application regarding inservice inspection of pressure isolation valves, we require the following information:

> Provide a list of pressure isolation valves included in your testing program with four (4) sets of piping and instrumentation diagrams which clearly show the reactor coolant system isolation valves. Also, discuss in detail how your leak testing program conforms to the staff position (see enclosure).

It is requested that this information be provided within 15 days of receipt of this letter. This position has previously been provided to your staff.

Sincerely,

Robert L. Tedesco, Assistant Director
for Licensing
Division of Licensing

Enclosure:
Staff Position -
Inservice Inspection of
Pressure Isolation Valves,
September 22, 1980

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SEE ATTACHED SHEET FOR DISTRIBUTION

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Mr. H. G. Parris
Manager of Power
Tennessee Valley Authority
500A Chestnut Street Tower II
Chattanooga, Tennessee 37401

cc: Herbert S. Sanger, Jr., Esq.
General Counsel
Tennessee Valley Authority
400 Commerce Avenue
E11B33
Knoxville, Tennessee 37902

Mr. H. N. Culver
Tennessee Valley Authority
400 Commerce Avenue, 249A HBB
Knoxville, Tennessee 37902

Mr. Michael Harding
Westinghouse Electric Corporation
P. O. Box 355
Pittsburgh, Pennsylvania 15230

Mr. David Lambert
Tennessee Valley Authority
400 Chestnut Street Tower II
Chattanooga, Tennessee 37401

Mr. J. F. Cox
Tennessee Valley Authority
400 Commerce Avenue, W10C131C
Knoxville, Tennessee 37902

Resident Inspector/Watts Barr NPS
c/o U. S. Nuclear Regulatory Commission
P. O. Box 629
Spring City, Tennessee 37831

210.0 MECHANICAL ENGINEERING BRANCH

There are several safety systems connected to the reactor coolant pressure boundary that have design pressure below the rated reactor coolant system (RCS) pressure. There are also some systems which are rated at full reactor pressure on the discharge side of pumps but have pump suction below RCS pressure. In order to protect these systems from RCS pressure, two or more isolation valves are placed in series to form the interface between the high pressure RCS and the low pressure systems. The leak tight integrity of these valves must be ensured by periodic leak testing to prevent exceeding the design pressure of the low pressure systems thus causing an inter-system LOCA.

Pressure isolation valves are required to be category A or AC per IWV-2000 and to meet the appropriate requirements of IWV-3420 of Section XI of the ASME Code except as discussed below.

Limiting Conditions for Operation (LCO) are required to be added to the technical specifications which will require corrective action i.e., shutdown or system isolation when the final approved leakage limits are not met. Also surveillance requirements, which will state the acceptable leak rate testing frequency, shall be provided in the technical specifications.

Periodic leak testing of each pressure isolation valve is required to be performed at least once per each refueling outage, after valve maintenance prior to return to service, and for systems rated at less than 50% of RCS design pressure each time the valve has moved from its fully closed position unless justification is given. The testing interval should average to be approximately one year. Leak testing should also be performed after all disturbances to the valves are complete, prior to reaching power operation following a refueling outage, maintenance and etc.

The staff's present position on leak rate limiting conditions for operation must be equal to or less than 1 gallon per minute for each valve (GPM) to ensure the integrity of the valve, demonstrate the adequacy of the redundant pressure isolation function and give an indication of valve degradation over a finite period of time. Significant increases over this limiting valve would be an indication of valve degradation from one test to another.

Leak rates higher than 1 GPM will be considered if the leak rate changes are below 1 GPM above the previous test leak rate or system design precludes measuring 1 GPM with sufficient accuracy. These items will be reviewed on a case by case basis.

The Class 1 to Class 2 boundary will be considered the isolation point which must be protected by redundant isolation valves.

In cases where pressure isolation is provided by two valves, both will be independently leak tested. When three or more valves provide isolation, only two of the valves need to be leak tested.

Provide a list of all pressure isolation valves included in your testing program along with four sets of Piping and Instrument Diagrams which describe your reactor coolant system pressure isolation valves. Also discuss in detail how your leak testing program will conform to the above staff position.

NOV 24 1980