UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 8, 2000

Mr. J. A. Scalice
Chief Nuclear Officer and
Executive Vice President
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 1 - ISSUANCE OF AMENDMENT REGARDING DIESEL GENERATOR ACTION COMPLETION TIME EXTENSION (TAC NO. MB0352 )

Dear Mr. Scalice:

The Commission has issued the enclosed Amendment No. 30 to Facility Operating License No. NPF-90 for Watts Bar Nuclear Plant, Unit 1. This amendment is in response to your application dated October 30, as supplemented November 15 and 22, 2000, which proposed a change on a one-time basis to extend the Action Completion Time for diesel generator 1B-B from 72 hours to 10 days in order to allow the replacement of the diesel's electric generator.

A copy of the safety evaluation is also enclosed. Notice of issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Robert Martin

Robert E. Martin, Senior Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-390

Enclosures: 1. Amendment No. 30 to NPF-90
2. Safety Evaluation

cc w/enclosures: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-390

WATTS BAR NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 30
License No. NPF-90

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Tennessee Valley Authority (the licensee) dated October 30, as supplemented November 15 and 22, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-90 is hereby amended to read as follows:

   (2) Technical Specifications and Environmental Protection Plan

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 30 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. TVA shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance, and shall be implemented prior to the beginning of the Cycle 4 Refueling Outage.

FOR THE NUCLEAR REGULATORY COMMISSION

Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Project Licensing Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 8, 2000

ATTACHMENT TO AMENDMENT NO. 30

FACILITY OPERATING LICENSE NO. NPF-90

DOCKET NO. 50-390

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by amendment number and contains vertical lines indicating the area of change.

| Remove Page | Insert Page |
|---|---|
| 3.8-3 | 3.8-3 |

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| B. (continued) | B.4 Restore required DG(s) to OPERABLE status. | 72 hours*<br><br>AND<br><br>6 days* from discovery of failure to meet LCO |
| C. Two offsite circuits inoperable. | C.1 Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.<br><br>AND<br><br>C.2 Restore one offsite circuit to OPERABLE status. | 12 hours from discovery of Condition C concurrent with inoperability of redundant required features<br><br>24 hours |

(continued)

* 10 days is allowed for the 1B-B diesel generator to replace the electrical generator. This allowance is only applicable until the beginning of the Cycle 4 Refueling Outage.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 30 TO FACILITY OPERATING LICENSE NO. NPF-90

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT, UNIT 1

DOCKET NO. 50-390

## 1.01 INTRODUCTION

By letter dated October 30, as supplemented November 15 and 22, 2000, the Tennessee Valley Authority (TVA, the licensee) submitted a request for changes to the Watts Bar Nuclear Plant, Unit 1 (WBN), Technical Specifications (TS). The requested changes modify the Limiting Condition for Operation (LCO) 3.8.1 Condition B, Required Action B.4, to allow for a one-time increase in the diesel generator Action Completion Time from 72 hours to 10 days for the 1B-B emergency diesel generator. The temporary revision would allow TVA to extend the action completion time in order to replace the 1B-B diesel's electric generator. Although the 1B-B diesel generator is fully operable, the licensee has reviewed oil and vibration trends and thinks that it might be prudent to replace the electrical generator portion of the diesel to ensure its reliability.

The November 15 and 22, 2000 letters provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

## 2.0 BACKGROUND

The licensee stated that after the recent refueling outage, the WBN predictive maintenance group wrote a corrective action document about a potential adverse trend in the bearing sump oil and shaft vibration of diesel generator 1B-B. The oil analysis, using direct reading ferrography and silicon content, has indicated an increase in both of these elements. Silicon is measured to assess the condition of the insulation between the rotating shaft and the bearing. The purpose of the insulation is to prevent circulating currents through the generator shaft. Silicon levels in the north side generator bearing are trending as follows:

6/30/00 - 2 parts per million (ppm)
8/23/00 - 3 ppm
10/17/00 - 7 ppm (after refueling outage)

The vibration analysis also showed an increasing trend, although the overall vibration levels were below the alert limit value of 0.325 inches per second (in/sec) and well below the fault limit value of 0.700 in/sec. The following readings were taken on the 1B-B diesel generator from the south horizontal direction:

ENCLOSURE

7/25/00 - .085 in/sec
8/22/00 - .184 in/sec
10/17/00 - .227 in/sec

An evaluation of the third harmonic (or three times component running speed, which is an indicator of misalignment or bearing slippage) indicates an increasing trend. This value also remains below the alert level at this time.

There have been similar problems with the WBN generators in the past. On June 2, 1994, the 1B-B diesel generator bearing failed. This was before TVA received an operating license for WBN Unit 1. Silicon levels before the failure had the following results:

3/19/91 - 5 ppm
6/26/91 - 12 ppm

Oil samples were not routinely taken between June 26, 1991, and the failure on June 2, 1994. During this 3-year period, the diesel generator was either in layup or undergoing component or preoperational testing. Therefore, the 3-year time period has no correlation to the time to failure.

To maintain the availability and reliability of diesel generator 1B-B, TVA plans to replace the electric generator in the 1B-B diesel if the data show a continuing negative trend. This could occur in early December 2000. Maintenance and testing of the same train are done in the same work period to preserve defense in depth. This reduces the risk to the plant from taking equipment out of service. Work on the 1B-B diesel is scheduled every fourth week.

TVA cannot implement its diesel generator replacement plan within the current 72 hour LCO completion time. TVA estimates that the work can reasonably be completed in 10 days with contingencies as follows:

| | | |
|---|---|---|
| 1. | Disassemble and remove existing 1B-B electrical generator | 77 hours |
| 2. | Install new generator | 16 hours |
| 3. | Perform general alignment | 24 hours |
| 4. | Reassemble support equipment | 62 hours |
| 5. | Perform operability testing and remove hold order | 30 hours |
| 6. | Contingencies | 31 hours |
| | Total | 240 hours |

## 3.0 EVALUATION

TVA proposes a temporary change to LCO 3.8.1 Condition B, Required Action B.4, to extend the action completion time from 72 hours to 10 days for the 1B-B emergency diesel generator. The WBN TS LCO 3.8.1B.4 currently states:

> "Restore Required DG(s) to OPERABLE Status" with a Completion time of 72 hours AND Six Days from discovery of failure to meet the LCO.

TVA's proposed change provides a footnote that reads:

> "10 days is allowed for the 1B-B diesel generator to replace the electrical generator. This allowance is only applicable until the beginning of the Cycle 4 Refueling Outage."

3.1 Deterministic Evaluation

The licensee stated that WBN is connected to a strong offsite transmission network, described in Section 8.0, "Electrical Power," of the WBN Final Safety Analysis Report (FSAR). The primary elements of the system include two 161 kilo-volts (kV) transmission lines from the 161 kV switchyard of the Watts Bar Hydro Plant. The transmission lines and the WBN 6.9 kV common station service transformers (CSSTs) are located entirely on TVA property, supported on separate towers, and routed to minimize the likelihood of simultaneous failure. The failure of any tower in one line will not endanger the other line under operating or postulated accident and environmental conditions.

TVA's Transmission Power Systems organization performs comprehensive transmission system studies for all TVA nuclear plants. The results of steady-state and transient stability studies show that the offsite power sources remain intact and are reliable sources to supply the onsite electric power system for (1) a safety injection (SI) in a WBN nuclear unit with an electrical fault in the generator stepup transformer or (2) an SI in a WBN nuclear unit with either the loss of a large generating unit, the loss of the largest load on the grid, or the loss of the most critical transmission line.

Each 161 kV circuit and each CSST have sufficient capacity to supply the essential safety auxiliaries of a unit during a design basis event and a simultaneous worst-case single transmission system contingency. Physical separation of lines, primary and backup protection systems, and a strong transmission grid minimize the probability of simultaneous failures of offsite power sources. The 6.9 kV shutdown boards in each power train draws preferred power from a CSST. If the preferred power source is not available, each 6.9 kV shutdown board is energized by a separate diesel generator.

In response to the staff's request for additional information (RAI) on the reliability and availability of the offsite power system, the licensee stated that WBN has not experienced a complete loss of offsite power (LOOP) since the 161 kV lines to the plant were placed in service in September 1977. Since fuel load in November 1995, there have been two events in which one line was lost (insulator flashover on 7/11/97, resulting in a phase-to-ground fault on C phase deenergizing the 161 kV train B line, and a phase-to-phase fault during logging operations on 8/4/00). Before fuel load, there were two construction accidents in 1979, and one line was lost during preoperational testing (in 1994 and again in 1995).

The standby diesel generators serve as the plant emergency standby alternating current power source. The diesels are designed to operate in parallel with the normal power source for test and exercise purposes.

For WBN, the diesel generators consist of four stationary self-contained, water-cooled, automatically starting, diesel-engine-driven electric generators. Two operable diesel generators in the same train are required to mitigate a design basis event in one unit. Single failure redundancy is provided by maintaining four diesels in ready condition for automatic start.

The WBN diesel generators were furnished by Engine Systems, Inc., and consist of two 16-cylinder engines manufactured by General Motors-Electro-Motive Division (type 16-645-E4 or -E4B) directly connected to a common 6.9 kV Electric Products (now called NEI Peebles) generator with an exciter. Each diesel generator can start and accelerate to rated speed within 10 seconds to power engineered safety features and shutdown loads. The diesel generators have a "continuous" rating at 4400 kilo watts (kW) and 5500 kVA and a "short time" rating of 4840 kW and 6050 kVA.

The diesel generators are designed to operate under each or any combination of the following onsite events:

1. loss of offsite power (LOOP)

2. degraded voltage on the 6.9 kV shutdown boards

3. safety injection (SI) signal

The diesel generators are designed for a life of 40 years with normal maintenance. The diesel generator voltage and frequency limits and the starting and loading reliability factors meet Regulatory Guide 1.9, "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants," and Institute of Electrical and Electronics Engineers Standard 387-1984, "Criteria for Diesel Generator Units Applied as Standby Power Supplies for Nuclear Power Stations." Additional information on the design of the WBN electrical system is given in Chapter 8, "Electric Power," of the updated FSAR.

In the event of a LOOP during power operation, the four 4400 kW tandem diesel generators ensure that sufficient power is available to run safety-related equipment needed for the safe shutdown of the plant and for mitigation and control during accidents. During shutdown and refueling conditions, the diesel generators will ensure that the facility is able to maintain shutdown or refueling conditions for extended periods of time.

The standby power system is divided into two redundant load groups, each composed of two electrical power trains (train 1A and 2A, train 1B and 2B) to power plant safety-related equipment. Each of the four diesel generators is connected to its own shutdown board (diesel generator 1A-A to shutdown board 1A-A, etc.). The Unit 1 diesel generators supply loads for the required Unit 1 ECCS equipment and Unit 1 auxiliaries. The Unit 2 diesel generators are primarily loaded with Unit 2 auxiliaries required for Unit 1 operation (e.g., essential raw cooling water).

WBN diesel generators have high availability and reliability ratings. In implementing 10 CFR 50.63, "Loss of all alternating current power," and Regulatory Guide 1.155, "Station Blackout," WBN established a diesel generator target reliability of 0.975. Since commercial operation in 1996, WBN has had only two valid failures to start on the four diesels in over 500 starts. This places the diesel generators well above the reliability goal of 0.975.

TVA's diesel generator replacement plan restricts other scheduled work on the remaining power sources. The plan includes a step to confirm, before beginning work that no maintenance or modifications are being performed that would affect the offsite power supply or the direct current

(DC) power supply in order to provide stability to the remaining electrical power sources. This step will ensure that no work on the electrical power sources has emerged since 1B-B diesel was schedule to be removed from service.

In response to the staff's RAI, the licensee stated that work activities are controlled under a 12-week work cycle. This cycle is based on train and channel work weeks with 2 weeks work on the train A, followed by 2 weeks on the train B. Work is bundled into functional equipment groups, and the scheduling for a given work week is coordinated by a work week manager, Operations, maintenance shop coordinators, and maintenance and system engineering representatives. This team is responsible for improving the material condition of the plant, managing risk, and minimizing the time of components are unavailable. The team evaluates external and internal hazards and threats and deliberately tries not to schedule concurrent work on risk-significant systems and opposite trains.

In scheduling work on the component, TVA will minimize work activities on the support system, and the power system to avoid challenging safety systems and important non-safety-related equipment. TVA does a risk assessment before doing on-line maintenance and evaluates emergent work against the assessed scope. TVA's procedure, Standard Programs and Processes (SPP) 7.1, "Work Control Process," Section 3.2.1, states: "An assessment of scheduled activities is performed before implementation of a work window."

Component testing or maintenance that increases the risk of a plant transient or trip is not scheduled concurrently with a diesel generator outage. Risk-significant work activities are evaluated in accordance with the TVA procedure SPP-7.1, including:

- The likelihood that the maintenance activity will significantly increase the frequency of a risk-significant initiating event (qualitatively by an order of magnitude or more).

- Component and system dependencies that are affected.

- The risk impact of performing the activities during shutdown with respect to performing the maintenance at power.

- The impact of transition risk if the maintenance activity would require a shutdown that would otherwise not be necessary.

- External event considerations involving the potential impacts of weather or other external conditions relative to the proposed maintenance evolution if these external impacts (e.g., weather, external flooding, and other external impacts) are imminent or have a high probability of occurring during the planned out of service duration.

- Restoration duration if the need arose to restore the SSC due to emergent conditions with respect to the time the performance of the function would be needed.

WBN personnel will, thus, consider weather conditions before taking diesel generator out of service. They will monitor meteorological resources and commercial weather services (e.g., weather channel.com) and, if bad weather threatens, will use the forecasts to decide whether to proceed with the task or postpone it.

In response to the staff's RAI on the tests to be performed after the generator replacement to declare the diesel generator operable and justification of performing those tests at power, the licensee stated that 1B-B generator will be replaced with a similar generator. A comparison of the two generators substantiates this statement.

| | CURRENT GENERATOR | REPLACEMENT GENERATOR |
|---|---|---|
| Serial Number | 17401226-200 | 18003481-200 |
| Date of Manufacture | 1974 | 1980 |
| Manufacturer | Electric Products/Cleveland, OH | Electric Products/Cleveland, OH |
| Outline Drawing Number | D-09233C | D-09233C |
| Instruction Book Number | WB-VTD-P318-0910 | WBN-VTD-P318-1060 |

TVA examined the two instruction manuals for the current and new generators. The manual for generator 18003481-200 states that it is an exact duplicate of generator models 17401225-200 through17401228-200. The manual confirms that characteristics such as resistance, reactance, inertia, and magnetization are the same in the new and the current generators.

Consequently, the generator's interaction with the excitation system and the engine and governor should not be affected by the exchange of generators, and testing the excitation system, the governor, and the engine is unnecessary. Testing the generator will suffice. Pre-installation tests of the replacement generator include winding resistance, winding meggars, and the step voltage DC leakage current of the stator windings. Post-installation tests of the generator will include alignment, running vibration, winding meggar, and temperature rise. To confirm that the preexisting exciter and governor settings are proper, TVA will demonstrate the overall emergency diesel generator system operation by doing the following post-maintenance tests and evaluations:

(1) a fast-start test from cold standby conditions and a comparison with the results of previous tests

(2) an endurance test (24 hour run, 2 hours @ 110% and 22 hours @ 100%)

(3) a full load rejection test and a comparison with the results of previous tests

The load rejection post-maintenance tests (PMT) test is needed to demonstrate that the diesel generator and response characteristics are acceptable and that diesel can be returned to operable status. TVA plans to perform the load rejection test while the unit is in Mode 1. The test will fulfill the PMT requirements and will also be credited for the TS surveillance requirements (SRs). The load rejection PMT is done in the same manner as TS SR 3.8.1.10. As noted in the TS Bases SR 3.8.1.10, "Credit may be taken for unplanned events that satisfy this SR including:... post corrective maintenance testing that requires performance of this surveillance in order to restore the component to OPERABLE, provided the maintenance was required, or performed in conjunction with maintenance required to maintain OPERABILITY or reliability." The test will, therefore, satisfy both the PMT and SR requirements, and since this test is an

unplanned corrective maintenance activity, it may be done in Mode 1. The note prohibiting testing in Modes 1 and 2 is meant to prevent perturbations in the electrical distribution system during plant operation. TVA expects that doing this test during power operation will have no effect on the plant for the following reasons.

At WBN, the full-load rejection test is done by paralleling the diesel generator with the offsite power supply. This is accomplished by synchronizing the diesel generator output with the 6900 V shutdown board, while the shutdown board is powered from the normal offsite power supply, then closing the diesel generator output breaker. The diesel generator is manually loaded to full load; then the output breaker is opened, creating the full-load rejection. The resulting overspeed and overvoltage transients experienced by the diesel generator are not seen by the 6900 volt (V) shutdown board or any of the connected safety loads.

The 6900 V safety buses will experience some minor voltage transients during this testing. As reactive load (KVAR) is added during the diesel generator loading, an increase in voltage of about 1% (from nominal 7071 V) on the 6900 V shutdown board will occur. This may cause the offsite power supply automatic load-tap-changer (LTC) to change one voltage tap (1.25%) to decrease the voltage (back to nominal). This type of LTC transient is normally experienced during loading of the diesel generator for monthly surveillance testing. The sudden removal of reactive loading when the diesel generator output breaker is opened causes the 6900 V shutdown board voltage to experience an equivalent decrease in voltage (about 1%), which may cause the offsite power supply LTC to change one tap position to increase the voltage back to nominal.

In summary, the typical and worst-case voltage transients on the 6900 V safety buses will be about ±1.25% from the nominal 7071 V, about the same as the LTC transients experienced daily during normal power operation.

A full-load rejection test was done on this diesel generator during the last outage, in October 2000. This test, past tests, and maintenance experience, show that the governor and the voltage regulator are properly tuned and functioning correctly.

### 3.2 Conclusion of Deterministic Review

On the basis of its review, the Nuclear Regulatory Commission (NRC) staff concludes that it is acceptable to extend the action completion time for diesel generator 1B-B from 72 hours to 10 days in order to replace the diesel's electric generator. The staff's conclusion is based on the following: (1) WBN is connected to a strong offsite transmission network; (2) there has been no complete LOOP at WBN since September 1977 (fuel load in November 1995); (3) actual reliability of diesel generators at WBN exceeds the reliability goal of 0.975; (4) no maintenance or modifications will be scheduled during the 1B-B generator replacement that would impact offsite power supply or the DC power supply in order to provide stability to the remaining electrical power sources; (5) component testing or maintenance of other electrical systems that increases the risk of a plant transient or trip are not scheduled concurrently with the diesel generator outage; and (6) WBN procedure (SPP 7.1) considers potential impact of weather or other external conditions in scheduling 1B-B generator replacement work.

3.3 Probabilistic Risk Assessment (PRA) Evaluation

The NRC staff evaluated whether the proposed change in the diesel generator 1B-B allowed outage time (AOT) extension would have a significant risk impact. No significant efforts were made to verify the accuracy in quantitative results. Instead, the staff focused its review on the reasonableness of the risk analysis in terms of scope and the technical bases supporting the key assumptions made in the risk analysis. In addition, the licensee's procedures and processes that control plant configurations during the proposed extended outage were evaluated in determining the overall risk implications associated with the proposed AOT extension.

When an emergency diesel generator (EDG) is taken out of service for maintenance, the increased risk of the plant is primarily associated with the LOOP sequences. LOOP is one of the dominant risk contributors for many PRAs. In its submittal, TVA assessed the risk associated with the proposed one-time AOT extension for the EDG using their PRA for internal initiating events. Their current PRA has been updated since the original individual plant examination (IPE) and its first revision submitted to NRC in 1992 and 1994, respectively. The incremental single outage risk for a 10-day duration was calculated using the PRA for internal initiating events. The incremental conditional core damage probability (ICCDP) and incremental conditional large early release probability (ICLERP) were estimated to be below the thresholds, 5E-7 for ICCDP and 5E-8 for ICLERP, prescribed in Regulatory Guide 1.177.

The staff found that the use of ICCDP and ICLERP for assessing the risk of the proposed one-time AOT extension was generally appropriate. However, the staff also found that TVA did not appropriately address the potential risk impact stemming from external initiating events. Subsequently, the staff requested the licensee for additional information on external initiating events. The staff examined seismically and fire-induced LOOP scenarios based on the licensee's response to the staff's questions.

The frequency of a seismic event that causes LOOP is relatively lower than that of LOOP for internal initiating events. The licensee indicated that the initiating frequency of a design basis safe shutdown earthquake or greater (0.18g or greater) during the proposed 10-day period would be approximately 6E-6. The licensee also calculated the conditional core damage probability given a LOOP event to be about 6E-3. Therefore, the ICCDP for a 10-day EDG outage was below 1E-7. Therefore, the staff finds that the potential risk impact due to an earthquake is small.

Fire in certain rooms or areas of a nuclear power plant could result in LOOP and/or loss of additional safety equipment. The additional equipment affected could be associated with the single train which remains to mitigate the LOOP event given an EDG is taken out for maintenance. The initiating event frequency of fire-induced LOOP is generally low compared with that of LOOP for internal initiating events. However, the fire risk impact could sometimes be significant since the mitigating capability of the LOOP event may also be compromised. Therefore, it was important for the staff to evaluate the potential risk impact of the proposed change due to fire.

The licensee's response to the staff's question indicated that the licensee identified three fire areas where, if a fire started in that area, diesel generator 1B-B would be the only protected train of power to achieve safe shutdown. Using the information in its IPE of external events, the licensee estimated the conditional core damage frequency with diesel generator 1B-B out of service and found that the fire risk impact would be small. It is notable that a severe fire in 6.9 kV

and 480 V Shutdown Board Room A could result in a LOOP event with little mitigating capability when diesel generator 1B-B is taken out of service. However, the licensee indicated that the initiating event frequency of such a severe fire is very low. The staff's evaluation finds that the licensee made a reasonable effort to analyze the potential risk impact of the proposed change due to fire. In addition, the staff did not find any significant problems associated with the licensee's approach to analyze the fire risk impact.

The licensee has a proceduralized work control process which performs an assessment of scheduled plant activities before implementation of a work window. For maintenance at power, the licensee assesses the potential risk. In scheduling the proposed work, the licensee will minimize other work activities to avoid challenges to safety systems and important non-safety related systems. In response to the staff's request, the licensee also placed an action item in the schedule to verify that no hot work is scheduled in the vicinity or on safety-related equipment for the duration of the proposed extended outage. The staff finds that the licensee's configurational control during the proposed outage is reasonable.

## 3.4 PRA Conclusion

In summary, the staff evaluated the risk significance of the proposed one-time diesel generator AOT extension. The licensee provided sufficient information for staff evaluation. The potential risk impact due to both internal and external initiating events were considered for evaluation. The staff also gave consideration to the licensee's work control process for configurational control in determining the overall risk implications. The staff finds that risk findings and insights support the proposed one-time AOT extension of diesel generator 1B-B.

## 4.0 CONCLUSION

The staff has reviewed the proposed temporary extension of the action completion time for diesel generator 1B-B from 72 hours to 10 days in order to replace the diesel's electric generator. We conclude that the results and insights of PRA analysis and deterministic evaluation support the proposed temporary extension of the action completion time for diesel generator 1B-B from 72 hours to 10 days in order to replace the diesel's electric generator.

Within this safety evaluation, reference is made to several licensee procedures and actions planned for the generator's replacement. The NRC staff finds that reasonable controls for the implementation of these procedures and actions are provided by the licensee's administrative processes including the controls of the Quality Assurance Plan for this safety related work. The staff has determined that these procedures and actions do not warrant the creation of regulatory requirements, such as license conditions, which would require prior NRC approval of subsequent changes.

## 5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Tennessee State official was notified of the proposed issuance of the amendment. The State official had no comments.

## 6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (65 FR 66266, dated November 3, 2000). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

## 7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Amar Pal
Ian Jung

Date: December 8, 2000

Mr. J. A. Scalice
Tennessee Valley Authority

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