Potential SSER Corrections noted in bold

1. SSER 18, Sec. 1.0 - second paragraph has a numbered list of items but the list is missing an item "6"

2. SSER 18, Sec. 2.4.3, page 9, **change "772.0-54" to "772.0-A4".**

3. SSER 26, Sec. 3.1.4 - third paragraph states: .

   TVA stated that in areas protected by automatic CO2 suppression systems, fire doors close upon the CO2 system actuation. The thermal link on the fire doors actuates and closes prior to CO2 fire suppression system discharge.

   These sentences need to be revised as follows:

   TVA stated that in areas protected by automatic CO2 suppression systems, sliding fire doors close upon the CO2 system actuation. **The sliding fire doors will also close when heat melts the fusible link. The swinging doors are normally closed and thus are closed prior to actuation of the CO2 system.**

   Basis: Part VII, Section 5.2

4. SSER 26, Sec. 3.1.5 - paragraph 2, does not address that some dampers are closed by the HVAC controls. The SSER should be revised as follows:

   In areas protected by automatic CO2 suppression systems, these dampers also close during the CO2 system discharge. The fire dampers that provide CO2 suppression system isolation capability are actuated by a release mechanism when the CO2 system activates, if not actuated by a thermal link prior to CO2 system discharge **or by actuation of the fire detection system through the CO2 system.**

   Basis: Part II, Section 12.5

5. SSER 26, Sec. 4.1, page FF-35 - 2nd full paragraph from the bottom, revise as noted:

   "TVA stated that the HPFP system is interconnected to the raw cooling water (RCW) ~~**system**~~ **and raw service water (RSW) systems** . Automatic isolation valves are provided to isolate the RCW system and selected Raw Service Water ~~**RCW**~~ **RSW** loads from the HPFP system when any fire pump is started to reduce the ~~**RCW**~~ **RSW** load on the HPFP system to ensure adequate flow and pressure are available. During normal operation, HPFP system pressure is maintained by the RCW pumps."

   Basis: Part II, Section 12.1

6. SSER 26. Sec. 4.1, page FF-35 - last full paragraph, revise as below:

   "The buried steel piping has an exterior coating to prevent corrosion. The electric fire pumps feed the steel headers **and the iron yard main** and the diesel pump feeds the iron yard main. The two loops (iron and steel) are connected at the IPS (via normally open valve 0-FCV-26-17) and at two remote points in the auxiliary building (via normally open valves 0-FCV-26-15 and 0-FCV-26-16). TVA stated that pressure control is provided by a pressure control valve downstream of the four electric pumps **and downstream of the diesel fire pump."**

Basis:

7. SSER 26. Sec. 4.1, page FF-36 - in first, partial paragraph, revise:

   "Because the two headers are redundant and because they are also connected to the iron yard main through valves in the ~~**turbine**~~ **auxiliary** building and Intake Pumping Station, the plant could isolate either main and would still have two sources of fire water available."

8. SSER 26. Sec. 4.1, page FF-36 - in 2nd, full paragraph, change RCW to RSW.

   In the FPR, TVA stated that the WBN fire water supply system as being able to provide the designed fire-fighting capacity either with one electric pump and the diesel pump unavailable or with the hydraulically least demanding portion of any loop main out of service. TVA further stated that the design flow demand consists of design flow to the largest sprinkler or water spray system plus design flow to non-isolated ~~**RCW**~~ **RSW** loads and 500 gpm for hose streams.

9. SSER 26. Sec. 4.1, page FF-36 - in 5th, full paragraph, clarify wording by adding "unlined steel" into first line between "actual" and "pipe".

   TVA's design calculation reduces the actual **unlined steel** pipe inside diameter by 0.8 inches and uses a Hazen-Williams C factor of 55 for the sections of piping that are normally wetted.

10. SSER 26, Sec. 4.1 - paragraph 6 states:

    Supervised (emphasis added) alarm circuits, indicating fire pump motor running condition and loss of line power on the line side of the switchgear, are provided in the MCR for each electric pump.

    The above states that the condition of the electric fire pump motor running and loss of line power annunciation circuits are supervised when in reality they are not supervised. A supervised circuit has features that alarm if something occurs to disable the alarm circuit. These circuits do not have this feature. The fire pump motor running status and loss of line power on the line side have indications in the main control room but the circuits are not supervised. This is consistent with the wording in FPR Part II, Section 12.1, 4th paragraph. Need to clarify SSER wording as:

    Indications of fire pump motor running condition and loss of line power on the line side of the switchgear, are provided in the MCR for each electric pump.

11. SSER 26. Sec. 4.2.1.1, page FF-38 - in 2nd, full paragraph, the second reference to NFPA 13 should be NFPA 15

    TVA used the guidance of NFPA ~~**13**~~ **15** to design the directional fusible nozzle water spray systems used to protect certain charcoal filters and the RCPs.

    This is addressed by Part X, Section 3.3.1

12. SSER 26, Sec 5.1 - 5th full paragraph revise:

"TVA stated that areas of divisional interaction within the annulus areas are protected by automatic fixed water-spray systems and ~~ionization~~ **photoelectric** smoke detectors. ~~**Additionally, fixed waterspray systems are provided for the charcoal and HEPA filters in the lower containment aircleanup units.**~~ Thermal detectors are provided for the charcoal filters and HEPA filters. Ionization duct detectors are provided for each lower containment cooling unit and each upper compartment cooling unit. In addition, ionization smoke detectors are provided for the exhaust ducts serving the containment purge and air exhaust systems and the emergency gas treatment system."

There are no fixed waterspray systems are provided for the charcoal and HEPA filters in the lower containment aircleanup units.

13. SSER 26, Sec. 5.2.1 - 3rd full paragraph, revise:

"FPR Part VIII summarizes the fire barriers that separate the MCR from the balance of the control building. The MCR is separated from most adjacent rooms on the same elevation in the control building by **non-regulatory** 1-hour rated fire barriers. Doors between the control room and the turbine building and the control room and auxiliary building are 3-hour fire-rated doors. The MCR and the cable spreading room are not separated by a rated fire barrier."

14. SSER 26, Sec. 5.4 - revise the last line of the first paragraph:

"...are **provided for** ~~**provided in**~~ each of the switchgear rooms.

Some of the standpipe and hose stations are outside the switchgear rooms but are provide for use in that room.

15. SSER 26. Sec, 5.6 - the first paragraph, 6th line, states

TVA stated in FPR Part VIII that turbine building oil hazards are protected by fixed water spray systems.

Revise to read:

TVA stated in FPR Part VIII that turbine building oil **tank** hazards are protected by fixed water spray systems.

This is consistent with Part VIII, Section F.8 Not all the oil hazards such as piping and turbine bearings are protected but the oil tank hazards are protected.

16. SSER 26, Sec. 6.2.3 - Need to clarify the stairwell wall to the Mechanical Equipment room is a non-regulatory barrier.

The chiller packages are located in the Unit 2 mechanical equipment room, which is not part of Stairwells C1 or C2 or the corridor. However, the room is separated from Stairwell C2 by a 2-hour **rated non-regulatory** reinforced concrete wall.

17. SSER 26, Sec. 6.2.7.2.1 - There is only one traveling screen room. Remove the "s" in several places as shown below:

In FPR Part VII, Section 2.6.2.1, TVA stated that, contrary to Position D.1.j, on elevation 741.0 feet of the IPS, there are four scupper openings penetrating the fire wall between the ERCW pump rooms and traveling screen room~~s~~.

The wall separating the redundant ERCW pumps and the wall separating the ERCW pumps from the traveling screen pumps are 3-hour fire-rated barriers with the exception of the four scupper openings. These scupper openings are located at the floor and provide drainage of rainwater from the ERCW pump rooms to the traveling screen wells. The floor slopes away from the ERCW pumps toward the scuppers so that a fire in one ERCW pump room will not propagate through the scuppers and jeopardize a redundant train of ERCW pumps.

The wall separating the ERCW pump rooms and traveling screen room~~s~~ is intended to protect the rooms from the radiant heat of an exposure fire. The roof is designed as a missile shield and has beams that will allow free air flow from a fire to dissipate heat to the outside environment. ERCW Pump Rooms A and B have heat detectors installed over the ERCW pumps and standpipe and hose stations are accessible for manual fire-fighting activities. TVA stated that even though these rooms are not provided with suppression and full area detection, the fire area barrier ratings are sufficient given the combustible loadings in the area.

Based on its review of the information submitted by TVA, the NRC staff concludes that the scupper configuration for the wall separating the ERCW pump rooms from the adjacent traveling screen room~~s~~ is an acceptable deviation from the guidance in Position D.1.j of Appendix A to BTP (APCSB) 9.5.1.

18. SSER 26, Sec. 6.2.11 - As discussed in FPR Part VIII, Section D.1.d, the control point is for RADCON and not Security. Revise SSER as shown below:

    6.2.11 Evaluation – Plexiglass Windows in the **RADCON** Control Point Building on the Refueling Floor

    TVA committed to the guidance in Position D.1.d in Appendix A to BTP (APCSB) 9.5-1, which states, in part, that interior finishes should be noncombustible or have a flame spread rating of 25 or less.

    In FPR Part VIII, TVA stated that, contrary to the guidance, the windows in a **RADCON** control point building (on the 757.0 feet elevation on the Refueling Floor) was built with plexiglass windows, which do not meet the flame spread criteria. TVA stated the following concerning the plexiglass windows:

    - Based on operating experience at Sequoyah Nuclear Plant, (i.e., a near-miss incident), glass windows pose a safety concern.
    - Available alternatives either do not meet the flame spread criteria, or are not sufficiently transparent.
    - The plexiglass windows add an insignificant amount of combustibles to a large room.
    - The plexiglass windows have no effect on the safe shutdown analysis.
    - The building is not used for safe shutdown.

    Based on its review of the information submitted by TVA, the NRC staff concludes that, because of the minimal amount of combustibles involved and the lack of an effect on safe shutdown, the presence of the plexiglass windows in the **RADCON** control point building on the Refueling Floor is an acceptable deviation from the guidance in Position D.1.d of Appendix A to BTP (APCSB) 9.5-1.

19. SSER 26, Sec. 6.3.4.3 Clarify some of the barriers are 2 hour non-regulatory

TVA stated that Rooms 676.0-A2 and 676.0-A3 are separated from adjacent non-high radiation area rooms by **3-hour regulatory and 2-~~and 3~~-hour non-regulatory** fire rated barriers of reinforced concrete construction.

20. SSER 26, Sec 6.3.4.4 - Clarify some of the barriers are 2-hr non-regulatory.

    TVA stated that Rooms 692.0-A3 and 692.0-A5 are separated from adjacent non-high radiation area rooms by 2- and 3-hour **regulatory and 2-hour non-regulatory** fire rated barriers of reinforced concrete construction.

21. SSER 26, Sec. 6.3.4.5 - Clarify these are non-regulatory barriers.

    TVA stated that the **non-regulatory** barriers between Rooms 676.0-A2 and 676.0-A3, Rooms 676.0-A2 and 692.0-A3, and Rooms 692.0-A3 and 692.0-A5 are not accessible because of the high levels of radiation present in these rooms.

22. SSER 19, Sec 3.1.4.1 - Clarify the fire protection program equipment in the Unit 1 and 2 main steam valve vault rooms. Note this could alternately be addressed by an addition to SSER 26, Section 4.3.

    The plant fire protection associated with Rooms A501 and A502 consists of stand pipes, hose stations and portable fire extinguishers for manual fire fighting.

23. SSER 19, sec 3.1.4.1 - Clarify the fire equipment in the annulus.

    Penetrations R1S007 and R1S008 are located in the 3-hour fire barrier separating the Reverse Osmosis Room (Room A810) and the Containment Annulus (Room R150) and automatic detection and sprinkler protection is provided on both sides of this wall **as required to address cable interactions and exposed cable concentrations**. These penetrations are filled with 12 inches of silicone foam which when tested provided the required 3-hour fire resistance in a 14-inch-diameter spare sleeve. In addition, these penetrations have a steel plate covering one or both sides of their through-wall openings.

    Penetration R1S020 is located in the 3-hour fire barrier separating the Ventilation Purge Air Room (Room A705) and Containment Annulus (Room R150) and automatic detection and sprinkler protection is provided on both sides of this wall **as required to address cable interactions and exposed cable concentrations**. This penetration is filled with 12 inches of silicone foam which, when tested provided the required 3-hour fire resistance in a 14-inch-diameter spare sleeve. In addition, this penetration has a steel plate covering both sides of its through-wall openings.

24. SSER 19, Sec. 3.1.4.1 - Clarify the fire equipment in the Heating and Ventilation Room.

    Penetration A0776AM, an 18-inch-diameter sleeve with a 1-inch-diameter pipe penetrant filled with 12 inches of silicone foam, is located in the **2~~3~~**-hour fire barrier separating the Heating and Ventilation Room (Room A712) and Corridor (Room A701). Automatic detection **and suppression** is provided on both sides of the wall. **~~and sprinkler protection is provided in corridor A701.~~**

25. SSER 19, Sec 3.1.4.1 - Clarify fire detection for Room E101.

    Penetration A1880AM is a foam seal in a 3-hour fire barrier. This penetration is an 18-inch-diameter sleeve with a 16-inch pipe penetrant and is filled with 17-1/2 inches of foam. The fire barrier separates the Upper Head Injection Equipment Room (Room E101) and nitrogen Storage Area (Room A506). These plant areas are provided with manual fire fighting equipment and **portions of the rooms are provided with** automatic fire detection capability.

Comments needing FPR correction and possible SSER revision.

1. SSER 26, Sec. 2.4.2.2 - present program does not require fire watch for all hot work in the safety related areas. Work such as underwater welding, outside areas and electric soldering are excluded. This appears to conflict with the second half of the first paragraph of the SSER.

   Revise FPR Part II, Section 11.0, 2nd paragraph (and subsequently SSER) as:

   Designated ignition source activity areas are reviewed and approved by the fire protection organization. A fire watch system shall be established for all ignition source work activities that are performed in safety-related areas of the plant except for specific non-risk ignition source activities of underwater welding, outside areas (fences, light poles, etc), and electric soldering. These fire watches remain with the work activity in accordance with the requirements stated in NPG-SPP-18.4.8 (Ref. 4.2.65).

   Revise NRC SSER 26, Section 2.4.2.2 as:

   In addition, TVA's program has established a hot work fire watch for all ignition source work activities that are performed in safety-related and safe-shutdown areas of the plant except for specific non-risk ignition source activities of underwater welding, outside areas (fences, light poles, etc), and electric soldering. .

2. SSER 26, Sec. 2.5.2, page FF-10 - The second full paragraph needs to be clarified that eligibility status is not removed until tolerance has expired.

   The SSER states:

   TVA stated that if a brigade member misses or does not complete a training session, either annual or quarterly; the member is placed in an ineligible status until the training is completed.

   TVA will revise Part II, Section 9.3.b as shown in pink below:

   Any individual who misses or fails to complete recurrent training is placed in an ineligible status when the current training (including the 25 percent extension) expires. The individual is ineligible until the missed training is made-up in accordance with the site procedure (Ref. 4.2.80).

   Revise NRC SSER 26, section 2.5.2 as:

TVA stated that **any individual who misses or fails to complete recurrent training is placed in an ineligible status when the current training (including the 25 percent extension) expires. The individual is ineligible until the missed training is made-up in accordance with the site procedure**

3. SSER 26, Sec. 4.1 (4), page FF-35 - states:

   "The fire pumps can only be manually stopped from the MCR or in the IPS (where the pumps are located)."

   In reality, the electric fire pumps cannot be shut down from the IPS but can be in the MCR and at each switchgear in the shutdown board rooms and the diesel pump can only be shut down locally at the pump.

   FPR Part VII, section 5.1 currently states:

   Outside of the Intake Pumping Station itself where the pumps are located, the fire pumps can only be manually stopped from the main control room, which is constantly manned by operations personnel, thereby providing adequate controls over when the fire pumps can be stopped.

   This needs to be revised as follows:

   The electric fire pumps can only be manually stopped from the main control room, which is constantly manned by operations personnel, or the shutdown board rooms. The diesel fire pump can only be stopped locally at the pump. These features provide adequate controls over when the fire pumps can be stopped.

   Then the NRC SSER 26, Section 4.1 (4) will require revision as:

   The electric fire pumps can only be manually stopped from the main control room, which is constantly manned by operations personnel, or the shutdown board rooms. The diesel fire pump can only be stopped locally at the pump.

4. SSER 26, Sec. 5.2.1 - 4th full paragraph, states:

   "FPR Part VIII describes the use of cables in the MCR. TVA stated that (1) wiring for lighting terminates in the lighting fixtures, (2) instrumentation and control wiring enters through the bottom of cabinets and runs only inside the panels or control boards in which the wires are terminated, *and (3) cable are not routed through the control room from one area to another area."*

   Need to revise FPR Part VIII, Section F.2 "Plant Conformance" as follows:

   Lighting wiring is above the ceiling and terminates in the lighting fixtures. Instrumentation and control cables are not located in concealed floor and ceiling spaces but enter from the cable spreading room to the MCR through floor penetrations directly below the panels. All cables that enter the control room terminate in the control room. Cable is not routed through the control room from one area to another.

   Revise NRC SSER 26, Section 5.2.1 as:

"FPR Part VIII describes the use of cables in the MCR. TVA stated 1) lighting wiring is above the ceiling and terminates in the lighting fixtures, 2) instrumentation and control cables are not located in concealed floor and ceiling spaces but enter from the cable spreading room to the MCR through floor penetrations directly below the panels and 3) all cables that enter the control room terminate in the control room (cable is not routed through the control room from one area to another).

5. Need to Revise FPR Part VIII, Section F.2, "Plant Conformance" column to state:

   Ionization smoke detectors are provided in selected cabinets in the MCR. General area fire alarms in the MCR and other areas of the plant will alarm and annunciate in the constantly attended MCR to alert the operators of a fire.

   Revise NRC SSER 26, Section 5.2.1 as:

   "TVA stated that ionization smoke detectors are provided in selected cabinets. TVA further stated that fire alarms in other parts of the plant, as well as the MCR, alarm and annunciate in a constantly attended location in the MCR."

6. SSER 26, Sec. 5.5 - The last sentence of the first paragraph is inaccurate in that some rooms in auxiliary building have combustible loading that exceeds the rating of the surrounding barriers.

   Add the following to FPR Part VII:

3.6 <u>Fire Barrier Rating</u>

REQUIREMENT – Appendix R, Section II.C.4 states: "Fire barriers or automatic suppression systems or both shall be installed as necessary to protect redundant systems or components necessary for safe shutdown."

DEVIATION – There are rooms as shown in Part I, Table I-1 for which the Combustible Load, Fire Severity (i.e., duration) exceeds the fire rating of the barrier(e.g. Auxiliary Building Corridor 713.0-A1 combustible loading exceeds 2-hours).

JUSTIFICATION - As discussed below, Watts Bar's "Defense in Depth" fire protection program serves to compensate for these higher Combustible Loadings. The program addresses combustible loads, preventing fires from starting, and detecting/extinguishing fires that occur. The fire barriers separating the Auxiliary, Control and Turbine Buildings from each other are 3-hour fire rated barriers. The individual rooms within each of these building are separated from each other by combinations of 3-hour, 2-hour and 1-hour fire barriers. Each of the rooms shown in Part I, Table I-1 that have combustible loads that exceed the fire barrier rating are provided with automatic detection and suppression.

<u>Combustible Loads</u>

In most of these rooms, the combustible load is due primarily to insulation on cables routed in cable trays. The calculations conservatively assume the cable trays are 100% filled with cables when in reality the cable trays are not full and sometimes only contain a few cables. Similarly, the calculations conservatively assume maximum quantities of

other combustibles such as transformer oil, lubricating oil, etc. The calculation further assumes complete combustion of the fuel. WBN has a Transient Combustible Loads program to minimize temporary/periodic risks from an exposure fire.

Fire Prevention

Circuit protective devices (breakers/fuses) ensure that an electrical fault on a cable will be cleared prior to the insulation reaching its auto-ignition temperature; therefore, an internally generated cable tray fire is not a credible fire ignition source. The transient combustible control program (Part II, Section 10.0) minimizes the potential for a significant exposure fire. The control of ignition sources (Part II, Section 11.0) requires that a fire watch is posted for hot work (e.g. welding, cutting, grinding, etc) except for unique situations like underwater welding.

Detection/Extinguishment of Fires

It would take a large exposure fire to generate sufficient heat energy to ignite the insulation on the cables that are either IEEE 383 fire retardant rated or coated with a fire retardant material. A fire that would produce a heat release rate great enough to cause ignition of the cable insulation would activate the fire detection and the automatic suppression. The fire detection in these areas will provide early warning of a fire to the Main Control Room. The majority of the sprinkler heads have a nominal activation temperature rating of 212 ^{o}F. For areas with CO_2 suppression, at least one detection zone uses thermal fire detection instruments which are rated at either 135 ^{o}F or 200 ^{o}F. The automatic suppression would suppress any postulated fire such that the fire would not present a credible challenge to the existing barriers. The fire brigade response to the fire provides additional defense-in-depth to ensure that the fire would not challenge the barrier.

Special Cases

Rooms 755.0-C9 and –C10 are the Operations Conference Room and Shift Engineer's Office and the combustibles are paper and furniture (none of which are ignition sources). There is no significant ignition source in either room and the rooms are in frequent use which would minimize the potential for a fire to propagate into a large fire. Room 742.0-D2 is the Diesel Generator Building Lube Oil Storage room and the lube oil in the 55 gallon drums accounts for 99.9% of the combustibles. There is no credible ignition source in the room and the steel barrels themselves would help prevent the spread of a fire.

Rooms 713.0-A1, 772.0-A2, 772.0-A15, and each Reactor Building Annulus have part of the area not covered by the sprinkler systems. These areas without sprinklers are limited and the combustible loading in these non-sprinkled areas is limited.

Conclusion

The WBN Fire Protection Program relies on defense-in-depth to minimize the potential for a fire by limiting combustible material, preventing fires from occurring, early detection of a fire that might occur, limiting the spread of the fire by fire rated barriers and automatic suppression, rapid response by a well trained, dedicated on-site Fire Brigade and supplemented with a local fire department if needed. Appendix R, Section III.G.2.c allows a combination of 1-hour fire barrier and automatic suppression and detection as an acceptable means of separating redundant safe shutdown components. The

conservative determination of the in situ combustible loading (e.g. all cable trays are assumed to be 100% loaded of which some only have a few cables) and the defense-in-depth of the fire prevention/protection provides a high degree of confidence that the fire rated barriers at WBN would prevent any credible fire that might occur from impacting an adjacent room. Therefore, WBN requests approval of this deviation.

7. SSER 26, Sec. 6.1.4 - 3rd paragraph, the statement of transformer silicon liquid in the Aux Bldg conflicts with the statement in Sec. 5.11.2, 4th paragraph on buffer areas

   SSER 26, Section 5.11.2 states:

   In its response dated September 30, 2011, to RAI VIII-21.1, TVA provided additional information regarding the installation of transformers containing “high fire point” silicone fluid. The NRC staff questioned the location of these transformers in plant areas that constitute buffer zones between analysis volumes, since the transformers were not described as being located in the buffer zones. TVA confirmed, in its RAI response, that the transformers are not located in buffer zones for large fire areas except for in the electrical equipment room in the IPS.

   SSER 26, Section 6.1.4 states:

   The intervening combustibles in the auxiliary building are mainly in the form of insulation on cables in open ladder type cable trays and Thermo-Lag fire barrier material. The remaining in situ combustible loading consists of lubricating oil in pumps, motors, and valves; transformer silicon liquid; and plastics in electrical panels, junction boxes, etc. The intervening combustibles in the IPS electric equipment room are mainly in the form of insulation on cables in open ladder type cable trays and transformer silicone liquid. The remaining in situ combustible loading consists of lubricating oil in small pumps, plastics associated with electrical panels, junction boxes, etc. Discussion of the nature of the transformer silicon liquid can be found in Section 5.11.2 of this evaluation.

   TVA’s 9/30/11 submittal states that the IPS is the only place where the silicon liquid is in the buffer zone. Part VII, Section 2.4 is not clear on this issue and seems to imply the Aux building is also involved.

   Need to revise FPR Part VII, Section 2.4 to include the words in **bold** below::

   DEVIATION - Safe shutdown components in the auxiliary building and Electrical Equipment room in the Intake Pumping Station (IPS) are in compliance with III.G.2.b requirements except that intervening combustibles, in the form of fluid filled transformers **(IPS only)**, insulation on cables in open ladder type cable trays and Thermo-Lag fire barrier material, are located between the redundant components.

   JUSTIFICATION - The combustible loading in the areas of the auxiliary building where redundant safe shutdown components are spatially separated is primarily the insulation on the cables in the cable trays and the Thermo-Lag fire barrier material (90% to 96%). The remaining in situ combustible loading consists of lubricating oil in pumps, motors, and valves; transformer silicone liquid **(IPS only)**; plastics in electrical panels and junction boxes, etc. The combustible loading in the Electrical Equipment room in the IPS consists primarily of transformer silicone liquid (approximately 13% of the load) and cables in cable trays (approximately 83% of the load) and the remainder is due to lubricating oil in small pumps and plastics associated with electrical panels and junction boxes, etc.

Need to revise NRC SSER Section 6.1.4 as shown in **bold**:

The intervening combustibles in the auxiliary building are mainly in the form of insulation on cables in open ladder type cable trays and Thermo-Lag fire barrier material. The remaining in situ combustible loading consists of lubricating oil in pumps, motors, and valves; transformer silicon liquid **(Intake Pumping Station only)**; and plastics in electrical panels, junction boxes, etc. The intervening combustibles in the IPS electric equipment room are mainly in the form of insulation on cables in open ladder type cable trays and transformer silicone liquid. The remaining in situ combustible loading consists of lubricating oil in small pumps, plastics associated with electrical panels, junction boxes, etc. Discussion of the nature of the transformer silicon liquid can be found in Section 5.11.2 of this evaluation.

8. SSER 26, Sec. 6.2.10 regarding the VCT room states:

   The rooms on both sides of the doors are provided with automatic fire detection and suppression.

   FPR Part VII, Section 3.5 states:

   "Both the pipe gallery and the VCT room are provided with automatic detection and suppression."

   This statement is in conflict with the actual plant and the information in Table I-1 (which states the VCT room has partial suppression)
   .

   Revise FPR Part VII, Section 3.5 as:

   "Both the pipe gallery and the VCT room (except the entrance labyrinth) are provided with automatic detection and suppression."

   Then the NRC SSER 26, Section 6.2.10 will require revision as follows:

   The rooms on both sides of the doors (except VCT room entrance labyrinth) are provided with automatic fire detection and suppression.

8. SSER 26, Sec. 6.3.5 - The SSER states that the Diesel Generator Building Lube Oil Storage room is a 3-hour rated compartment. In actuality the room only has one regulatory 3-hr rated fire wall, two walls are non-regulatory, and one wall is not rated. The floor and ceiling are not rated. There is only one fire rated door (D8A) and that door is not described correctly in either SSER 18 or 26. This error (one regulatory door versus two regulatory doors) was identified to the NRC in TVA's letter dated June 27, 2012.

   FPR Part VII, Section 5.2 incorrectly describes the fusible link arrangement as:

   "The fusible links are installed directly above the center of the door on that one side."

   The wording should be revised to:

“The fusible links are installed above the door with one set just above the door and the other set closer to the ceiling on that one side of the door.”

The NRC SSER 26, Section 6.3.5 needs to be revised similar to that shown below.

The lube oil storage room (Room 742.0-D2) has a regulatory 3-hour fire-rated barrier between Room 742.0-D2 and the adjacent rooms 742.0-D4 and 742.0-D9 and non-regulatory 2-hour fire rated barrriers to Room 742.0-D10 and Room 742.0-D1. The other wall for the room and the floor/ceiling are not fire rated.

The configuration at Watts Bar is provided with a swinging hollow metal door in the opening and a sliding fire door. The 3-hour fire rated self closing sliding doors (D8A) is in the open position and closes only when the thermal link above the door melts or the CO2 suppression system for the room discharges. Door D8A, located in the Diesel Generator Building Lube Oil Storage Room, is provided with two fusible links (one just above the door and the other higher up), but only on one side. To conform to the guidelines of NFPA 30 and 80, this door should be self-closing. In addition to the sliding door, TVA installed a normally closed hollow metal side-hinged swinging door. TVA stated that this swinging door is similar to rated fire doors and is expected to prevent smoke and hot gases from a fire from passing through the opening until the fusible links melt and the fire rated sliding door closes or the fire suppression system actuates.