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Document Control Desk
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Duke Energy Carolinas, LLC
Oconee Nuclear Station, Units 1, 2, and 3
Docket Numbers 50-269, 50-270, and 50-287
Proposed Exigent Technical Specification (TS) Amendment to TS 3.10.1, "Standby Shutdown Facility"
License Amendment Request (LAR) No. 2011-09

In accordance with 10 CFR 50.90, Duke Energy Carolinas, LLC (Duke Energy or Duke) proposes to amend Renewed Facility Operating Licenses Nos. DPR-38, DPR-47, and DPR-55 for Oconee Nuclear Station (ONS), Units 1, 2, and 3. Duke Energy requests the Nuclear Regulatory Commission (NRC) to review and approve a one-time exigent change to the Completion Time (CT) of Technical Specification (TS) 3.10.1, Condition F. The proposed change extends the Completion Time of TS 3.10.1, Required Action (RA) F.1 by 10 days.

On July 8, 2011, at 1610, ONS Units 1, 2 and 3 entered TS 3.10.1, Condition A due to concerns associated with the Standby Shutdown Facility (SSF) pressurizer heaters in-containment circuit breakers. Since maintenance activities being performed to restore the SSF to operable status were not completed prior to the end of the CT of Required Action A.1, Condition F was entered July 15, 2011. RA F.1 requires the SSF Systems to be restored to OPERABLE status within 45 days from discovery of initial inoperability (by August 22, 2011 at 1610). The concern was that the SSF Pressurizer Heater circuit breakers would prematurely trip on their overload protection device during elevated containment temperatures. Testing of replacement breakers has not been successful. As a result, a modification to replace the existing in-containment breakers with fuses and fuse blocks will be installed to provide equivalent protection. At this time, fuses and fuse blocks to replace the circuit breakers are undergoing testing to ensure they will perform under SSF conditions. The testing may require additional time, up to September 1, 2011, 10 days beyond the 45 days permitted by the CT of TS 3.10.1, RA F.1.

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Duke recognizes that there will be no time available in the CT for RA F.1 for the remainder of the calendar year. Duke does not have any planned work that would require the use of the 45 day CT this year.

Duke Energy requests approval of this license amendment request on a one-time exigent basis by no later than August 20, 2011 in order to avoid the TS required shutdown of ONS Units 1, 2 and 3 due to inoperability of the SSF Auxiliary Service Water System.

In accordance with Duke Energy administrative procedures and the Quality Assurance Program Topical Report, this license amendment request has been previously reviewed and approved by the Oconee Plant Operations Review Committee.

Implementation of this license amendment request will not require changes to the Oconee Updated Final Safety Analysis Report (UFSAR).

Pursuant to 10 CFR 50.91, a copy of this license amendment request is being sent to the appropriate State of South Carolina official.

Should you have any questions concerning this information, please call K. R. Alter at (864) 873-3255.

I declare under penalty of perjury that the foregoing is true and correct. Executed on August 12, 2011.

Sincerely,

TPGillespie

T. Preston Gillespie, Jr.
Vice President
Oconee Nuclear Station

Enclosure and Attachments:

Enclosure - Exigent Technical Specification Change Request
Attachment 1 - Retyped Technical Specification Pages
Attachment 2 - Marked-Up Technical Specification Pages

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ENCLOSURE

EXIGENT TECHNICAL SPECIFICATION CHANGE REQUEST

Enclosure
Exigent Technical Specification Change Request

1.0 SUMMARY DESCRIPTION

Pursuant to 10 CFR 50.4, 10 CFR 50.90, and 10 CFR 50.91(a)(6), Duke Energy proposes a one-time exigent change to Oconee Nuclear Station (ONS), Units 1, 2 and 3 Technical Specification (TS) 3.10.1 Required Action F.1 Completion Time (CT). The proposed change would allow additional time to complete testing of the fuse and fuse blocks that will be installed to replace the in-containment circuit breakers for the Standby Shutdown Facility (SSF) controlled pressurizer heaters.

On July 8, 2011, at 1610, ONS Units 1, 2 and 3 entered TS 3.10.1, Condition A due to concerns associated with the SSF pressurizer heaters in-containment circuit breakers. Since maintenance activities being performed to restore the SSF to operable status were not completed prior to the end of the CT of Required Action (RA) A.1, Condition F was entered July 15, 2011. RA F.1 requires the SSF Systems to be restored to OPERABLE status within 45 days from discovery of initial inoperability (by August 22, 2011 at 1610). The concern was that the SSF Pressurizer Heater circuit breakers would prematurely trip on their overload protection device during elevated containment temperatures. Testing of replacement breakers has not been successful. As a result, a modification to replace the existing in-containment breakers with fuses and fuse blocks will be installed to provide equivalent protection. At this time, fuses and fuse blocks to replace the circuit breakers are undergoing testing to ensure they will perform under SSF conditions. The testing may require additional time, up to September 1, 2011, 10 days beyond the 45 days permitted by the CT of TS 3.10.1, RA F.1.

Duke Energy requests approval of this license amendment request on a one-time exigent basis by no later than August 20, 2011 in order to avoid the TS required shutdown of ONS Units 1, 2 and 3 due to inoperability of the SSF Auxiliary Service Water System.

1.1 Background

TS Limiting Condition for Operation (LCO) 3.10.1, Standby Shutdown Facility (SSF), item "a," requires that the SSF ASW System be OPERABLE in Modes 1, 2, and 3. The SSF controlled pressurizer heaters are supporting components of the SSF ASW System. TS 3.10.1, Condition A requires the SSF ASW System to be restored to OPERABLE status within 7 days. Condition F allows additional time to restore an SSF system (up to 45 days from initial inoperability) for maintenance. If Condition F is not met, the unit must be placed in Mode 3 within 12 hours and in Mode 4 within 84 hours per Condition G.

On July 8, 2011, at 1610 hours, the SSF ASW System was declared inoperable due to concerns associated with the SSF pressurizer heaters in-containment circuit breakers. The effort to resolve these concerns will require additional time beyond that permitted by the Completion Time of TS 3.10.1, Required Action F.1.

2.0 DETAILED DESCRIPTION

As described in ONS Updated Final Safety Analysis Report (UFSAR) 9.6.4.6.1, safe shutdown of the reactor is initially performed by the insertion of control rods from the control room. Insertion can also be accomplished by removing power to the control rod drive mechanisms. When normal and emergency systems are not available, reactor coolant inventory and reactor shutdown margin are maintained, from the SSF Control Panel, by the SSF Reactor Coolant (RC) makeup pump taking suction from the spent fuel pool. Primary system pressure can be maintained by the pressurizer heaters or by use of charging (SSF RC Makeup) combined with SSF letdown. Should the pressurizer heaters be unavailable due to a fire inside containment, progression towards cold shutdown may be initiated as soon as Mode 3 with an average Reactor Coolant temperature ≥525°F (RCS cold leg temperature ≤555°F and RCS pressure ~2155 psig) is achieved. Decay heat removal may be accomplished by releasing steam from the steam generators via the atmospheric main steam code safety valves. Feedwater to the steam generators can be provided by the SSF ASW System. For fires inside containment affecting all pressurizer heaters, shutdown can be achieved from the unit's main control room.

2.1 Intended Resolution of Proposed Amendment

10 CFR 50.91(a)(6) states that where the Commission finds that exigent circumstances exist, in that a licensee and the Commission must act quickly and that time does not permit the Commission to publish a Federal Register notice allowing 30 days for prior public comment, and it also determines that the amendment involves no significant hazards considerations, it will either issue a Federal Register notice providing notice of an opportunity for hearing and allowing at least two weeks from the date of the notice for prior public comment; or it will use local media to provide reasonable notice to the public in the area surrounding a licensee's facility of the licensee's amendment and of its proposed determination, consulting with the licensee on the proposed media release and on the geographical area of its coverage. In such situations, the Commission will provide for a reasonable opportunity for the public to comment, using its best efforts to make available to the public whatever means of communication it can for the public to respond quickly, and, in the case of telephone comments, have these comments recorded or transcribed, as necessary and appropriate.

When the Commission has issued a local media release, it may inform the licensee of the public's comments, as necessary and appropriate. The Commission will publish a notice of issuance under 10 CFR 2.106 and will provide a hearing after issuance, if one has been requested by a person who satisfies the provisions for intervention specified in 10 CFR 2.309. The Commission expects its licensees to apply for license amendments in timely fashion. It will decline to dispense with notice and comment on the determination of no significant hazards consideration if it determines that the licensee has failed to use its best efforts to make a timely application for the amendment in order to create the exigency and to take advantage of this procedure. Whenever an exigent situation exists, a licensee requesting an amendment must explain the exigency and why it cannot avoid this situation, and the Commission will assess the licensee's reasons for failing to file an application sufficiently in advance of that event.

2.2 Reason Exigent Situation Has Occurred

On June 1, 2011, the SSF pressurizer heater panel board breakers inside containment were questioned with respect to their capability to remain closed when exposed to the high ambient temperatures expected inside containment during an SSF event. During an event that requires operation of the SSF, operation of systems normally used to provide Reactor Building cooling is not credited. Therefore, Reactor Building temperature is expected to increase over time and would eventually exceed the maximum ambient operating temperature of the pressurizer heater breakers potentially resulting in the loss of all SSF controlled heaters. As a result of this finding, the SSF was declared inoperable at 0125 on June 2, 2011.

Spurious actuation of the thermal overload protection provided for the SSF controlled pressurizer heater breakers could occur due to elevated temperature in the Reactor Building environment where the breakers are located. If this occurred, SSF controlled pressurizer heaters would no longer be available to offset pressurizer ambient heat loss.

The affected panel board breakers were replaced with solid state breakers that were expected to be ambient temperature insensitive and would remedy the high temperature concern. The SSF was declared operable for ONS Unit 2 on June 6, 2011, for ONS Unit 3 on June 7, 2011, and for ONS Unit 1 on June 8, 2011.

On June 24, 2011, test specimens of the newly installed solid state circuit breakers tripped during testing to fully demonstrate their ability to properly function during an SSF event. It was determined that operation with these breakers in the SSF pressurizer controlled heaters circuits could not be credited for operability of the SSF. During this time, however, use of charging (SSF RC Makeup) combined with SSF letdown was credited to permit the SSF to be operable but degraded.

On July 8, 2011, the SSF ASW was declared inoperable after the NRC questioned the 10 CFR 50.59 evaluation in support of the compensatory measure of applying a specific computer code to demonstrate acceptable means of satisfying the SSF RCS pressure control function.

Following this action, investigation for other acceptable circuit breakers and other alternative repairs was initiated. Several alternatives including alternate breaker design, fuses, and breaker removal were evaluated. Engineering personnel have been performing design activities for each available option. As part of these activities rigorous reviews of the design and physical configuration were conducted which resulted in multiple containment entries on each unit to verify configuration, ensure adequate cable spacing, obtain cable samples, etc.

In order to provide a design in the shortest time achievable, installation of breakers from a different manufacturer that had been previously qualified to LOCA conditions were the prioritized repair selected. In parallel with this, efforts continued to:

- Evaluate the feasibility of removing the breakers from containment and credit circuit protection provided by the breakers and fuses installed in the SSF.
- Identify high temperature power fuses capable of operating in the expected elevated containment temperature.

Procurement and test preparation efforts were being pursued in parallel. The breakers, which were to be procured QA-1 and had previously been tested (by another company) for a LOCA environment, were tested from approximately July 18 to August 6, 2011. During the period of breaker testing, the other modification options were progressing in parallel.

On August 6, 2011, the results of testing showed the breakers would not function in the elevated temperature environment that would be experienced and that an alternate method of providing circuit protection was required. In addition to the fuse testing being done, efforts on the breaker removal modification and the cabling issues associated with these efforts continued. (The breaker removal modification was determined to be an interim modification if the fuse modification is not successful.)

Duke Energy located a fuse that would potentially function in the expected environment of an SSF Event on July 19, 2010. At this point, testing was already progressing on the breakers. Duke Energy considered contracting another vendor to start testing the fuses and determined that the vendor performing the breaker testing would complete breaker testing and could start fuse testing before arrangements to utilize a separate service provider could be established. This vendor, Kinectrics, was deemed to be the best available option. Using the same vendor allowed Duke Energy to more readily move from non-Appendix B testing to Appendix B testing. Duke Energy ordered sixteen 80 amp fuses and direct shipped them to the vendor on July 20, 2011. Additional parts were shipped beginning August 1, 2011. Procurement activities involved moving the purchased components across two international borders. Activities began for preliminary testing to confirm the fuse could withstand the required temperature on July 24, 2011. Preliminary testing began on August 6, 2011. This preliminary testing has subjected the fuses to maximum expected amperage with ambient temperatures exceeding those expected during an SSF Event with no failures or anomalies identified. Based on testing to date, high confidence has been established that the fuses will function properly in the containment temperature expected during an accident. 10 CFR 50 Appendix B testing began on August 12, 2011, and is scheduled to complete on August 17, 2011 with the certification of test completion scheduled to be provided by August 18, 2011.

Duke Energy is requesting 10 additional days in order to complete testing activities for the modification to replace the existing breakers in containment with fuses. Whereas preliminary testing has demonstrated a high confidence that the fuses will function in the SSF event environment, additional activities such as testing to demonstrate the fuse and associated components will function properly from seismic and temperature perspectives, dedication, installation, and closeout are still outstanding. Each of these activities has potential for delays. The QA-1 dedication and installation activities have the potential for unforeseen fabrication, installation, and post modification test delays; however, the testing poses the largest risk for delays since there is the possibility of test equipment problems, test failures not related to the fuses that could result in repeating the test, shipping delays, and the possibility that the 100 hour oven aging test is determined to be required.

Presently, a challenge schedule has been communicated to the Oconee Nuclear Station Staff that assumes no problems are encountered. This schedule reflects that the SSF would be returned to service on all three units by August 18, 2011. A worst case schedule would assume that the 100 hour aging test is required, plus an unforeseen test failure not associated with the fuses that would result in having to repeat the test, which would require approximately 130 additional hours. This schedule reflects the SSF being returned to service on all three units by September 1, 2011. Should the test results be unsatisfactory and the SSF could not be restored to operable status a three unit shutdown would be required.

2.3 Description of Proposed Changes

Duke Energy proposes the addition of the following to Note in the Completion Time for Required Action F.1:

* *An additional 10 days is allowed prior to September 1, 2011 at 1610 hours.*

This note (*) will modify the 45 days in the Note and the Completion Time. This extension will allow time to test the fuses that will replace the SSF controlled pressurizer heater in-containment circuit breakers and contingencies.

3.0 TECHNICAL JUSTIFICATION

3.1 Description of Affected Components

The SSF ASW System is a high head, high volume system designed to provide sufficient steam generator (SG) inventory for adequate decay heat removal for three units during a loss of normal AC power in conjunction with the loss of the normal and emergency feedwater systems. One motor driven SSF ASW pump, located in the SSF, serves all three units. The SSF ASW pump, two HVAC service water pumps, and the Diesel Service Water (DSW) pump share a common suction supply of lake water from the embedded Unit 2 condenser circulating water (CCW) piping.

The SSF ASW System is used to provide adequate cooling to maintain single phase RCS natural circulation flow in MODE 3 with an average RCS temperature $\geq 525^{\circ}F$ (unless the initiating event causes the unit to be driven to a lower temperature). In order to maintain single phase RCS natural circulation flow, an adequate number of Bank 2, Group B and C pressurizer heaters must be OPERABLE. These heaters are needed to compensate for ambient heat loss from the pressurizer.

The number of SSF heaters utilized is based on testing and calculations performed on a unit by unit basis to determine the minimum number of required heaters needed to overcome actual pressurizer ambient losses.

The Engineering Change to replace the circuit breakers located inside containment will result in removing the breakers from the existing panelboard and installing a new backplane assembly into the existing panelboard. The new backplane assembly will contain distribution blocks, fuse holders, fuses, and interconnecting wiring. The fuses have been sized to prevent spurious failures during an SSF Event yet still protect the cabling between the fuses and the pressurizer heaters during normal operation.

3.1.1 Quality Classification of Change

The fuses and associated components that are being installed by this change are QA-1.

3.1.2 Fire Protection Considerations for the Change

Duke Energy Engineering Change procedures require that modifications be evaluated for potential effects on the Fire Protection Program. For the modification that will perform the replacement of the SSF pressurizer heater circuit breakers with fuses, it has been confirmed that there will be no impact on breaker coordination in that the breakers will be removed and fuses will be installed in their place. No changes to Fire PRA credited components are being made and no ignition sources are being installed.

Therefore, there is no effect on the breaker coordination study or fire hazards associated with this change.

3.1.3 SSF Event Environmental Qualification Considerations for the Change

Duke Energy is performing testing to the fuses for the containment environment expected during an event required to be mitigated by the SSF. The SSF and equipment are not required to be EQ qualified for the reasons listed below, however, it is required to be designed for environmental conditions that could be present during an SSF event.

As stated in the NRC Safety Evaluation for Environmental Qualification of Safety-Related Equipment for ONS, Units 1 2, and 3, dated April 11, 1983, Section 1.3.1:

"Of particular concern is the **assurance that equipment will remain operable during and following exposure to the harsh environmental conditions (i.e., temperature, pressure, humidity [steam], chemical spray, radiation, and submergence) imposed as a result of a design basis accident.** [emphasis added] These harsh environments are generally defined by the limiting conditions resulting from the complete spectrum of postulated break sizes, break locations, and single failures consequent to a LOCA, main steam line break (MSLB) inside the reactor containment, or a HELB outside the reactor containment (such as a main steam or feedwater line break). In addition, depending on specific plant design features, other postulated HELB locations may be associated with:

- the chemical and volume control system (CVCS) letdown line
- the steam supply piping to
  - the auxiliary feedwater (AFW) pump turbine
  - the reactor core isolation cooling (RCIC) pump turbine
  - the high pressure core injection (HPCI) pump turbine
  - the isolation condenser
- steam generator blowdown."

The postulated conditions that the SSF is designed to mitigate are not considered to be design basis events as defined for 10 CFR 50.49 consideration as cited above, but are for the 10 CFR 50 Appendix R fire, the turbine building flood, sabotage, station blackout, or tornado missile events, as stated in TS Bases Section 3.10.1.

The Oconee Nuclear Station containment response to a Loss of All AC Power (station blackout) event is analyzed with the FATHOMS/DUKE-RS containment analysis code using the methodology described in Duke Topical Report DPC-NE-3003-PA, Rev. 1. Consistent with the topical report, the analysis uses reduced heat transfer surface areas for passive heat sink conductors and a reduced containment free volume. The heat source is RCS ambient heat loss to the Reactor Building atmosphere. Without any RBCU fans, Building Spray, high-velocity blowdown, or any other mechanism for the circulation of the building atmosphere other than natural convection, the Uchida heat transfer correlation described in the topical report is judged to be inappropriate for application in the analysis. Therefore, a turbulent natural convection heat transfer correlation available in the FATHOMS code is utilized for all passive heat structures in lieu of the Uchida heat transfer correlation.

3.1.4 Spent Fuel Pool Heatup Considerations

The modification being implemented does not affect the interface of the SSF with the Spent Fuel Pool. In the event that there is an occurrence requiring the SSF Reactor Coolant Makeup (RCMU) pump during this Completion Time extension period, the pressurizer heaters will be available to support the response to this occurrence because the fuses will have been installed. Response of the Spent Fuel Pool in the scenarios for which the SSF RCMU pump is operating is provided in several ONS calculations that are available for review.

3.1.5 Cable Rating Considerations

Cable derating for ambient temperature and spacing is in accordance with IEEE S-135, ICEA P-46-426 per UFSAR 9.5.1.4.3. The fusing provides cable fault protection for the individual pressurizer heater circuits within Group B and C heaters. The Group B and C pressurizer individual heater power circuit is protected from all creditable faults by the new 80A fuse. The cable derating and fuse sizing per this design input are in accordance with of UFSAR Sections 8.3.1.5.1 and 9.5.1.4.3.

3.2 Risk Insights

At ONS, the SSF pressurizer heater breakers are located inside the containment structure. The dominant SSF related scenarios in the Oconee PRA involve a loss of all AC power to normal and emergency core cooling systems (an SBO - "Station Blackout" event). During an SBO event, all normal and backup containment coolant systems will be lost and if AC power is not restored for an extended period of time, containment temperature may increase to a point that the breakers trip open and the pressurizer heaters are lost. The resolution of this problem involves new cabling and the replacement of the breakers with protective fuses capable of withstanding the conditions for a loss of containment cooling situation.

With the new design installed, the SSF heaters are expected to be fully available for RCS pressure control during the 10 day extension period while awaiting final 10 CFR 50 Appendix B test results. The completed preliminary testing (temperature only) provides high confidence the fuses will operate in the credited environment. If for some unanticipated reason the test results are unacceptable, the impact on plant risk has been evaluated to be low based on the following considerations:

1. The probability of a catastrophic event requiring SSF accident mitigation during the 10 day TS extension period is very low.
2. The period of additional SSF inoperability is during the late summer when tornado activity and intensity in the southeastern US is significantly lower. Historical data shows that the Oconee tornado strike frequency is approximately 2.8 times lower than the annual average value during this time.
3. The failure of a fuse would be expected to occur at a relatively high temperature that would require many hours for containment temperatures to reach the failure temperature. During the time prior to heater failure, other plant recovery actions would be in-progress while the SSF heaters are still operating. For example, the recovery of offsite power or alignment of the Station ASW switchgear would provide a means to recover from a subsequent SSF failure for many accident scenarios.

During the period of additional SSF inoperability, risk management actions will be implemented to ensure that risk is maintained as low as reasonable achievable. The following items will be used to manage risk:

a) Use of the Protected Train Program to avoid adverse impacts on the availability of the Keowee Hydro Units, Underground Path, Switchyard, Turbine Driven Emergency Feedwater Pump, 4kV Switchgears B1T, B2T, and ES Buses TC, TD, TE on each unit.

b) Turbine Building (TB) walkdowns each shift to inspect for degraded conditions affecting the likelihood of a TB Flood in the following areas.

1. CCW Condenser Inlet Piping
2. CCW Condenser Inlet Expansion Joint
3. CCW Condenser Outlet Piping
4. CCW Condenser Outlet Expansion Joint
5. CCW Emergency Discharge Piping (24" and 30" diameter piping only)
6. CCW Crossover / LPSW Suction Piping
7. CCW Unwatering Piping
8. CCW Condensate Cooler Inlet Piping
9. CCW Condensate Cooler Outlet Piping
10. CCW RCW Inlet Piping (18" diameter or larger)
11. CCW RCW Outlet Piping (18" diameter or larger)

c) Stationing a dedicated SSF Operator in the SSF

d) Dedicated Power Alignment from Lee CTs to CT5

It is also noted that the core damage risk associated with the dominant SSF scenarios is not significantly improved by bringing the units down to cold shutdown (Mode 5). The dominate SSF risk scenarios involve a loss of the Main Feeder Buses (MFBs) due to physical damage to the 4160V electrical equipment. The most dominant of these events are Bus Duct Fires that damage vital cable trays in the Turbine Building and cause an SBO through various lockout or breaker control failures. Similarly, tornado strikes and High Energy Line Breaks (HELBs) in the Turbine Building can damage or fail the MFBs or main 4kV switchgears. With the exception of HELB events, these hazards are present regardless of the plants operating mode, and thus, overall plant risk is not necessarily reduced by bringing the units to cold shutdown.

In cold shutdown (MODE 5), core cooling is provided by the LPI system with LPSW cooling water providing the ultimate heat sink. Since both LPI and LPSW are dependent on the MFBs and 4kV switchgear for power, a catastrophic failure of the 4kV power system (like a Bus Duct fire or tornado event) during cold shutdown would have a very high conditional core damage probability.

The dominant SSF risk scenarios and their relative risk impacts in cold shutdown are discussed below.

- Bus Duct Fire Risk

  The Main Feeder Buses remain energized regardless of plant operating mode where the bus ducts remain capable of having a High Energy Arcing Fault (HEAF). Thus, risk does not improve by shutting down to Mode 5 because defense-in-depth is reduced when the ability to use secondary side heat removal is lost.

- Tornado Risk

  Tornado risk does not improve by shutting down to Mode 5. The logic is the same as for the bus duct fires.

- Other Large TB Fires

  Generally, this fire risk is not improved by shutting down to Mode 5. However, in theory there would be a small fire risk benefit by taking Main Feedwater pumps out of service.

- HELBs in the Turbine Building

  HELB consequences are reduced as the plant is brought to Mode 5 because energy is removed and the threat of MFB/Switchgear damage is diminished.

- Turbine Building Flooding

  TB flood events are not dominant SSF scenarios and would not lead to a loss of all AC power. In this case, normal containment cooling system would be expected to be available for all but the most severe TB floods which cause failure of the LPSW pumps needed for Reactor Building Cooling Unit (RBCU) operation.

- External Flood Risk

  External Flood risk does not improve by shutting down to Mode 5 because defense-in-depth is not improved.

In conclusion, the qualitative evaluation shows that the core damage risk associated with the proposed Technical Specification change will not result in a significant increase in radiological risk to the public. This conclusion is based on the preliminary testing (temperature only) demonstrating the functionality of the SSF fuses and the low probability of catastrophic events requiring SSF activation during the 10 day extension period. This risk is further reduced by the implementation of risk management actions that minimize the potential for accident initiating events and maximize the availability of other accident mitigation systems.

For the dominant SSF risk scenarios, the alternative of shutting down the units rather than operating for an additional 10 days in the action statement does not significantly improve core damage risk.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

Applicable regulatory requirements are contained in the ONS UFSAR, Section 3.1, "Conformance with NRC General Design Criteria". The applicable principal design criterion is. This criterion is stated below.

Criterion 9 - Reactor Coolant Pressure Boundary (Category A)

The reactor coolant pressure boundary shall be designed and constructed so as to have an exceedingly low probability of gross rupture or significant leakage throughout its design lifetime.

Discussion

The Reactor Coolant System pressure boundary meets the criterion through the following:

1. Material selection, design, fabrication, inspection, testing, and certification in accordance with ASME codes for all components excluding piping, which is done in accordance with the USAS B31.1 and B31.7 codes. The piping was redesigned to the 1983 ASME Code during the Steam Generator replacement project.

2. Manufacture and erection in accordance with approved procedures.

3. Inspection in accordance with code requirements plus additional requirements imposed by the manufacturer.

4. System analysis to account for cyclic effects of thermal transients, mechanical shock, seismic loadings, and vibratory loadings.

5. Selection of reactor vessel material properties to give due consideration to neutron flux effects and the resultant increase of the nil ductility transition temperature.

The materials, codes, cyclic loadings, and non-destructive testing are discussed further in Chapter 5.

4.2 Precedent

There were no precedent industry or Duke Energy licensing actions found that are similar to this exigent license amendment request.

4.3 Evaluation of Significant Hazards Considerations

Duke Energy has concluded that operation of ONS in accordance with the proposed license amendment does not involve a significant hazards consideration. Duke Energy's conclusion is based upon its evaluation, in accordance with 10 CFR 50.91(a)(1), of the three standards set forth in 10 CFR 50.92(c).

Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

Duke Energy requests the Nuclear Regulatory Commission (NRC) to review and approve a one-time extension to the Completion Time for TS 3.10.1, Required Action F.1 to allow time for testing fuses in the in-containment SSF controlled pressurizer heater circuits and returning these circuits and the SSF ASW to OPERABLE status. The extension will prevent a shutdown of ONS Units 1, 2 and 3 to complete the testing of the fuses. This conclusion is based on the low probability of catastrophic events requiring SSF activation during the 10 day extension period and compensatory actions in place. The proposed change does not involve a significant increase in the probability or consequences of an accident previously analyzed because the SSF ASW is not an accident initiator.

Does the proposed amendment create the possibility of a new or different kind of accident from any previously evaluated?

Response: No.

This change does not create the possibility of a new or different kind of accident from any accident previously evaluated. No new accident causal mechanisms are created as a result of the NRC granting of this proposed change. The one-time extension to the Completion Time of TS 3.10.1, Required Action F.1 to allow time for testing of the fuses for the in-containment SSF controlled pressurizer heater circuits and return the SSF ASW System to OPERABLE status do not introduce any changes to the plant which will introduce any new or different accident causal mechanisms.

Does the proposed amendment involve a significant reduction in the margin of safety?

Response: No.

The margin of safety is related to the confidence in the ability of the fission product barriers to perform their design functions during and following an accident situation. The Reactor Coolant System is that barrier that is directly associated with this change. The performance of this fission product barrier will not be significantly impacted by the proposed change because the extension of the Completion Time of TS 3.10.1, Required Action F.1 does not introduce any change in performance of those barriers to perform their design functions. The events that will require SSF mitigation have been previously analyzed and do not affect the fission product barriers' ability to perform.

4.4 Conclusions

In conclusion, based on the considerations discussed above, (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 NRC'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.

5.0 ENVIRONMENTAL ASSESSMENT

The proposed change does not involve a significant hazards consideration, a significant change in the types of or significant increase in the amounts of effluents that may be released offsite, or a significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed change meets the eligibility criteria for the categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed change is not required.

ATTACHMENT 1

RETYPED TECHNICAL SPECIFICATION PAGES

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. SSF Reactor Coôlant Makeup System inoperable.	C.1	Restore SSF Reactor Coolant Makeup System to OPERABLE status.	7 days
D. SSF Power System inoperable.	D.1	Restore SSF Power System to OPERABLE status.	7 days
E. SSF Instrumentation inoperable.	E.1	Restore SSF Instrumentation to OPERABLE status.	7 days
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met when SSF Systems or Instrumentation are inoperable due to maintenance.	F.1	Restore to OPERABLE status.	-----------NOTE---------- Not to exceed 45* days cumulative per calendar year ------------------------------ 45* days from discovery of initial inoperability **An additional 10 days is allowed prior to September 1, 2011 at 1610 hours.*
G. Required Action and associated Completion Time of Condition F not met. <u>OR</u> Required Action and associated Completion Time of Condition A, B, C, D, or E not met for reasons other than Condition F.	G.1 <u>AND</u> G.2	Be in MODE 3. Be in MODE 4.	12 hours 84 hours

ATTACHMENT 2

MARKED-UP TECHNICAL SPECIFICATION PAGES

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. SSF Reactor Coolant Makeup System inoperable.	C.1 Restore SSF Reactor Coolant Makeup System to OPERABLE status.	7 days
D. SSF Power System inoperable.	D.1 Restore SSF Power System to OPERABLE status.	7 days
E. SSF Instrumentation inoperable.	E.1 Restore SSF Instrumentation to OPERABLE status.	7 days *
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met when SSF Systems or Instrumentation are inoperable due to maintenance.	F.1 Restore to OPERABLE status.	------------NOTE------------ Not to exceed 45 days cumulative per calendar year ------------------------------ 45 days from discovery of initial inoperability *An additional 10 days is allowed prior to September 1, 2011 at 1610 hours.*
G. Required Action and associated Completion Time of Condition F not met. <u>OR</u> Required Action and associated Completion Time of Condition A, B, C, D, or E not met for reasons other than Condition F.	G.1 Be in MODE 3. <u>AND</u> G.2 Be in MODE 4.	12 hours 84 hours

ATTACHMENT 2

MARKED-UP TECHNICAL SPECIFICATION PAGES

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. SSF Reactor Coolant Makeup System inoperable.	C.1	Restore SSF Reactor Coolant Makeup System to OPERABLE status.	7 days
D. SSF Power System inoperable.	D.1	Restore SSF Power System to OPERABLE status.	7 days
E. SSF Instrumentation inoperable.	E.1	Restore SSF Instrumentation to OPERABLE status.	7 days *
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met when SSF Systems or Instrumentation are inoperable due to maintenance.	F.1	Restore to OPERABLE status. ** An additional 10 days is allowed prior to September 1, 2011 at 1610 hours.*	------------NOTE------------ Not to exceed 45 days cumulative per calendar year ----------------------------------- 45 days from discovery of initial inoperability
G. Required Action and associated Completion Time of Condition F not met. <u>OR</u> Required Action and associated Completion Time of Condition A, B, C, D, or E not met for reasons other than Condition F.	G.1 <u>AND</u> G.2	Be in MODE 3. Be in MODE 4.	12 hours 84 hours