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Serial: MNS-15-052

10 CFR 50.90

July 15, 2015

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Washington, DC 20555

Duke Energy Carolinas, LLC (Duke Energy)
McGuire Nuclear Station (MNS), Units 1 and 2
Docket Numbers 50-369, 50-370
Renewed License Numbers NPF-9 and NPF-17

Subject: Response to June 18, 2015, NRC Request for Additional Information Regarding License Amendment Request to Implement a Risk-Informed Performance-Based Fire Protection Program (TAC Nos. MF2934 and MF2935).

References:

1. MNS Letter, License Amendment Request (LAR) to Adopt National Fire Protection Association (NFPA) 805 Performance-Based Standard for Fire Protection for Light-Water Reactor Generating Plants, dated September 26, 2013, Agencywide Document and Management System (ADAMS) Accession Number ML13276A126.
2. NRC Letter, McGuire Nuclear Station, Units 1 and 2 - Acceptance Review Results RE: License Amendment Request to Adopt National Fire Protection Association 805 Performance-Based Standard for Fire Protection for Light-Water Reactor Generating Plants, (TAC Nos. MF2934 and MF2935), dated December 31, 2013, ADAMS Accession Number ML13354B879.
3. MNS Letter, Supplemental Information For License Amendment Request (LAR) to Adopt National Fire Protection Association (NFPA) 805 Performance-Based Standard for Fire Protection for Light-Water Reactor Generating Plants, dated January 8, 2014, ADAMS Accession Number ML14016A097.
4. NRC Letter, McGuire Nuclear Station, Units 1 and 2 - Acceptance of Requested Licensing Action RE: License Amendment Request to Adopt National Fire Protection Association (NFPA) 805 Performance-Based Standard for Fire Protection for Light-Water Reactor Generating Plants (TAC Nos. MF2934 and MF2935), dated January 15, 2014, ADAMS Accession Number ML14014A279.

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5. NRC Letter, Request for Information Regarding License Amendment Request To Implement A Risk-Informed Performance-Based Fire Protection Program (TAC Nos. MF2934 and MF2935), dated August 28, 2014, ADAMS Accession Number ML14233A366.
6. MNS Letter, Response to August 28, 2014, NRC Request for Additional Information Regarding License Amendment Request To Implement A Risk-Informed Performance-Based Fire Protection Program, dated October 13, 2014, ADAMS Accession Number ML14297A162.
7. NRC Letter, Request for Information Regarding License Amendment Request To Implement A Risk-Informed Performance-Based Fire Protection Program (TAC Nos. MF2934 and MF2935), dated October 27, 2014, ADAMS Accession Number ML14295A307.
8. MNS Letter, Response to August 28, 2014, NRC Request for Additional Information Regarding License Amendment Request To Implement A Risk-Informed Performance-Based Fire Protection Program, dated November 12, 2014, ADAMS Accession Number ML14328A628.
9. MNS Letter, Response to August 28, 2014, NRC Request for Additional Information Regarding License Amendment Request To Implement A Risk-Informed Performance-Based Fire Protection Program, dated December 12, 2014, No ADAMS Number.
10. MNS Letter, Response to August 28, 2014, NRC Request for Additional Information Regarding License Amendment Request To Implement A Risk-Informed Performance-Based Fire Protection Program, dated January 26, 2015, ADAMS Accession Number ML15036A084.
11. MNS Letter, Response to August 28, 2014, NRC Request for Additional Information Regarding License Amendment Request to Implement A Risk-Informed Performance-Based Fire Protection Program, dated February 27, 2015, No ADAMS Number.
12. MNS Letter, Response to August 28, 2014, NRC Request for Additional Information Regarding License Amendment Request to Implement A Risk-Informed Performance-Based Fire Protection Program, Dated March 13, 2015, No ADAMS Number.
13. NRC Letter, Request for Additional Information Regarding License Amendment Request To Implement A Risk-Informed Performance-Based Fire Protection Program, Dated May 8, 2015, ADAMS Accession Number ML15125A328.
14. NRC Letter, Request for Additional Information Regarding License Amendment Request To Implement A Risk-Informed Performance-Based Fire Protection Program, Dated June 18, 2015, ADAMS Accession Number ML15147A628.

By letter dated September 26, 2013 (Reference 1), Duke Energy submitted a LAR to adopt a new, risk-informed, performance-based (RI-PB) fire protection licensing basis for the MNS Units 1 and 2.

On December 18, 2013 (Reference 2), the NRC requested supplemental information in order to make the September 26, 2013, LAR complete and acceptable for review by the NRC. By letter dated January 8, 2014 (Reference 3), Duke Energy provided the requested supplemental information to the NRC. By letter dated January 15, 2014 (Reference 4), the NRC accepted the September 26, 2013, LAR for review.

By letters dated August 28, 2014, and October 27, 2014 (References 5 and 7, respectively), the NRC requested additional information (RAI) in order to complete their review of the

September 26, 2013, LAR. Those letters grouped the RAIs into 60-day, 90-day, 120-day, and radiation release responses. Duke Energy provided the 60-day, 90-day, and some of the 120-day RAI responses by letters dated October 13, 2014, November 12, 2014, and December 12, 2014 (References 6, 8, and 9, respectively). Responses to the radiation release RAIs and some of the remaining 120-day RAIs were provided by letter dated January 26, 2015 (Reference 10).

By letter dated February 27, 2015 (Reference 11), Duke Energy submitted responses to all remaining RAIs, excluding Probabilistic Risk Assessment (PRA) RAI 03. This submittal also included revised responses to PRA RAI 12 and PRA RAI 17. By letter dated March 13, 2015 (Reference 12), Duke Energy submitted response to PRA RAI 03.

The response to second-round PRA RAIs (Reference 14) are included in Enclosure 1 of this letter. McGuire's planned response timeline for all remaining PRA and Fire Modeling (FM) RAIs is contained in Enclosure 2 of this letter.

The conclusions reached in the original determination that the September 26, 2013, LAR contains No Significant Hazards Considerations and the categorical exclusion from performing an Environmental/Impact Statement have not changed as a result of the RAI responses in Enclosure 1.

This submittal does not contain any new or revised regulatory commitments.

Please direct any questions on this matter to Brian Richards at (980) 875-5171.

I declare under penalty of perjury that the foregoing is true and correct. Executed on July 15, 2015.

Sincerely,

CCL III for SDC acting McGuire Plant Manager

Steven D. Capps

Enclosures 1 and 2

xc:

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ENCLOSURE 1

Duke Energy Response to the MNS NFPA 805 LAR
PRA RAIs (Second-Round)

REQUEST FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST TO ADOPT

NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 805

PERFORMANCE BASED STANDARD FOR FIRE PROTECTION

FOR LIGHT WATER REACTOR GENERATING PLANTS

DUKE ENERGY CAROLINAS, LLC

MCGUIRE NUCLEAR STATION UNITS 1 AND 2

DOCKET NOS. 50-369, 50-370

By letter dated September 26, 2013, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13276A126), Duke Energy Carolinas (Duke) submitted a license amendment request to change its fire protection program to one based on the National Fire Protection Association (NFPA) Standard-805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition, as incorporated into Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.48(c). In order for the U. S. Nuclear Regulatory Commission (NRC) staff to complete its review of the license amendment request (LAR), the following additional information is requested:

PRA RAI 12.01

In PRA 12, the NRC staff noted the discussion in license amendment request (LAR) Section V.2.7 that describes two main control room (MCR) abandonment on loss-of-habitability scenarios. The NRC staff requested "[a]n explanation of how the [conditional core damage probabilities] CCDPs account for the range if probabilities for properly shutting down the plant, and discussion of how they were applied in the scenario analysis." Three different levels of fire severity were provided as examples illustrating the source of the range of shutdown probabilities. The response stated, in part, that:

"Each MCR abandonment scenario encompasses the range of results from few functional failures to multiple functional failures, each condition (b.i, b.ii, & b.iii) leading to the most severe end state where the SSF is the sole remaining success path after abandonment. In the MNS Fire PRA, for the abandonment scenarios, the number of fire induced failures and spurious operations is based on the panel of origin that produces the highest conditional core damage probability (CCDP). Therefore, the abandonment scenarios account for the worst case impacts on the SSF regardless of a potentially more favorable outcome."

The response further clarifies that:
". .. main control board frequency was applied in the quantification of the abandonment scenario for the main control board (MCB) fire. The remaining fire area wide ignition frequency (including electrical cabinet and transient frequency), was applied to the abandonment scenario for the non-MCB fires in the control room."

Although the response states that two scenarios are modelled (one following MCB fires and another following non-MCB fires) it is unclear whether a single CCDP/CLERP is used for the two abandonment scenarios. No discussion or justification was provided as to why not accounting for the range of probabilities in the fire PRA will result in a well characterized or conservative risk change-in-risk estimate. The NRC staff requests the following information to determine whether accounting for the range of probabilities for properly shutting down the plant following loss of MCR habitability would change the acceptable change-in-risk estimates to unacceptable estimates.

b) Explain any differences between the compliant and the variant plant PRA models for these abandonment scenarios.
c) A claim of "worst case impact" is insufficient when the meaning of worst case can vary as it does with change-in-risk calculations. Summarize how the change in risk calculation is performed and justify that the change-in-risk estimates from these loss of habitability abandonment scenarios is well characterized or conservative.

McGuire Response:

b) The FPRA model includes a model of the Standby Shutdown Facility (SSF) and its related actions and components; therefore, there is no modeling difference between the compliant and variant cases. Instead, the compliant case is represented by not failing the functions associated with the non-compliances. In other words, the linkages between fire-induced component failures and the FPRA model are broken such that the compliant case cutsets include the random failures of the functions rather than fire-induced failures. No additional equipment is assumed to be failed in the compliant case that is not failed in the variant case. Risk reduction modifications are accounted for in both cases and the same ignition frequencies and non-suppression probabilities are used.

c) The Main Control Board (MCB) fire scenario fails all injection capabilities, including normal sources of RCP seal injection, and fails the motor-driven Auxiliary Feedwater (CA) pumps. The scenario ensures that the only remaining mitigating strategies in the variant case MCR abandonment scenarios involve SSF mitigating functions for seal injection and the Auxiliary Feedwater turbine-driven pump (CATDP). In addition, a non-MCB fire scenario was modeled, which captures an additional fire-induced spurious operation of the reactor coolant pumps (RCPs). Since the variant case fails the ability of the operators to trip the RCPs from the MCR, the only means to avoid an induced RCP seal LOCA is to trip the RCPs external to the MCR. The entire fire frequency for all MCB and non-MCB ignition sources is applied to the respective abandonment scenario for both the variant and compliant cases.

The abandonment scenarios were chosen to maximize the overall CDF and LERF of the variant cases, and the compliant cases were structured to remove all variances listed in the FREs. The SSF mitigating functions are modeled directly in the FPRA, including human error probabilities for SSF operator actions and random failure probabilities for SSF equipment failures, and these functions are well characterized within the FPRA model that is used for both the compliant and variant cases. The FPRA logic is consistent with the plant design and operating procedures. Additionally, the overall delta risk of MCR area fire scenarios is well characterized because the FPRA model quantifies the delta risk associated with fires in the MCR area that do not cause an abandonment of the MCR, in addition to those fires which do.

PRA RAI 13.01

The response to PRA RAI 13 discussed how the change-in-risk was calculated for fire areas (other than the MCR and cable room) that are designated as safe shutdown facility (SSF) areas in accordance with 10 CFR 50, Appendix R Section III.G.3. This response was augmented with information provided in the slides for the public meeting on April 14, 2015 (ADAMS Accession No. ML 15099A587), which included further explanation about how the compliant and post-transition plants for these areas were modelled in the Fire Probabilistic Risk Assessment (FPRA). Based on the methods used by McGuire in the FPRA as described in the meeting, please provide the following:

a) Confirm that the equipment damaged by each fire in each SSF area has been identified using the McGuire fire damage methodology and is assumed to fail in the FPRA.
b) Confirm that all applicable equipment undamaged by each fire is nominally available to mitigate the fire, i.e., is credited in the PRA model. Summarize any differences between the nominally available equipment in the complaint versus the variant plant.
d) Summarize the procedures and process used by the operating crews to mitigate fires in the SSF areas using the surviving equipment in the area.
e) Provide the procedural step(s) including the decision guidelines directing the operating crews to make the decision to activate the SSF and subsequently establish control of the plant at the SSF.
f) Summarize the proceduralized steps directing the operating crews to transfer command and control from the MCR to the SSF.
g) Summarize the operating training in the activation and the use of the SSF.
h) LAR Section V.2.6 and the response to PRA RAI 13 state that the MCR is only abandoned (i.e., command and control is transferred to the SSF) on loss of control room habitability. Clarify this statement in light of the April 14, 2015, presentation and the statement that the SSF is a PCS as defined in RG 1.205 that indicates that command and control must be transferred to the SSF on loss of control.
i) Explain how the variance from deterministic requirements (VFDRs) within the SSF areas were identified. LAR Section W.2.1 and the response to PRA RAI 13 explains that, generally, the compliant plant for both abandonment and non-abandonment scenarios was evaluated by "toggling" off or excluding basic events to remove the fire-induced failures associated with the VFDRs. Clarify, relative to the variant plant model, how excluded basic events are identified and removed from the compliant plant quantification.

McGuire Response:

a) The FPRA model captures the equipment damaged by each fire in the SSF areas using the McGuire fire damage methodology. The equipment damaged in the SSF fire areas is determined in the same manner as other plant areas. For each ignition source the cables and equipment within the zone of influence are identified and the associated components are assigned the appropriate failure mechanism (e.g., spurious operation or failure to operate) and circuit failure probability in accordance with NUREG/CR-7150.

b) As discussed in the response to PRA RAI 12.01.b, the FPRA model includes a model of the SSF and its related actions and components. The same model is used to calculate both the compliant and variant plant cases, so there are no differences in the modeled equipment. Those components that are undamaged by the fire retain their nominal availability and reliability values as determined by the internal events PRA model.

Equipment availability is determined based on whether the cables associated with each component are damaged by the fire. The compliant case breaks the link between the cable and its associated components for each Fire Area (FA), thus ensuring that the equipment associated with each VFDR function is available in the compliant case. No additional equipment is assumed failed in the compliant case.

d) An SSF FA assumes complete FA burnout. Minor SSF FA conflicts that could impact SSF shutdown in the SSF FAs were identified as VFDRs. Normal shutdown components as charging, component cooling, nuclear service water are not deterministically credited in such SSF assured FAs.

However, it is not likely that a complete FA will be consumed by the postulated fire. For all FAs, plant symptoms can cause entry into EPs/ APs/ or Annunciator responses; as is the case for any perturbation not caused by fire.

A fire causes entry into AP-45 (plant fire response procedure) which identifies the credited train for each FA. If EP/ AP/ or Annunciator responses are not responding and AP-45 identifies the FA as a SSF assured FA, the MCR will activate the SSF via AP-24 due to loss of plant control.

e) MNS EPs / APs are symptom based and not prescriptive. Therefore there are not specific steps requiring the operator to transfer to SSF.
AP-45 Plant Fire is entered upon confirmation of an active fire.
AP-45 delineates what the credited train is for each FA. For SSF FAs the following requirements are typical (the steps below are for Unit 1, Unit 2 is similar):

Step XXX (representative) -- IF AT ANY TIME Unit 1 has lost all NCP seal cooling (seal injection and thermal barrier), THEN transfer control of Unit 1 to the SSF as follows:

- Dispatch operator to perform Blue Folder at SSF and complete AP-24 Activation.
- Trip Unit 1 reactor.
- Trip all Unit 1 NC pumps.
- Dispatch operator to perform (Unit 1 SSF Activation - 1ETA Switchgear room Actions).
- Perform AP-24 (Loss Of Plant Control Due To Fire or Sabotage).

Step YYY (representative) -- IF AT ANY TIME Unit 1 A and B Train controls become ineffective in controlling equipment required for safe shutdown, THEN RETURN TO Step XXX first bullet (representative).

AP-45 has provisions to Operations on a FA basis of consequential equipment which could be damaged by fire. The intent of AP-45 is to supplement 'normal' EP/AP or Annunciator responses where a complete FA burnout and analysis for multiple spurious operations may not be adequately covered. This procedure allows preventive actions vs. the other procedures which contain responsive actions. The preventive actions, coupled

with reasonable fire brigade responses, may preclude the need for SSF Activation. There is a notable nuclear safety benefit to avoid plant transients associated with initial AP-24 entry actions of RX trip, turbine trip, main feedwater trip, main steam isolation, NCP trip etc.

f) Attachment G of the NFPA 805 LAR submittal identifies PCS actions which commence upon MCR decision to activate the SSF and upon the first step in AP-24, even though component control from SSF may not be capable until all transfer actions are complete. This is in agreement with RG 1.205 Rev 1, Section 2.4.b.1 “The location should be considered the primary command and control center when the main control room can no longer be used.”

The procedure for loss of plant control room due to fire is AP-24. The steps below are for Unit 1, (Unit 2 is similar).

- Licensed operator to SSF to start SSF D/G (as required) and maintain Hot Standby
- Operator dispatched to 1ETA switchgear room to initiate transfer of controls to SSF
- The control of S/G auxiliary feedwater is assured from the TDCA panel (PCS) by another minimum shift staffing operator. Recovery Actions are relied upon in certain SSF FAs to throttle flow locally.

g) The training used for fires and activation of the SSF are as follows:

The operators are trained and qualified for a plant fire using training lesson plans.

- AP-45 Plant Fire Lesson Plan
- AP-24 Loss of Plant Control Due to Fire Lesson Plan

Requalification for APs is conducted on a four (4) year interval.

Many of the tasks in the above procedures are incorporated as job performance measures (JPM) that are also utilized in qualification and re-qualification of operators.

Exercises in AP-24 and AP-45 are relatively common during plant ERO drills with OPS being simulator players.

There is a simulator SSF console that is used in certain simulator exercises for licensed operators.

h) For the purposes of this discussion, Command and Control refers to the location where the operators are operating equipment to achieve and maintain the plant in a Safe and Stable condition. This location will be either the Main Control Room (MCR) or the Standby Shutdown Facility (SSF) and the transfer of Command and Control to the SSF will occur on loss of control or loss of MCR habitability.

The response to PRA RAI 13 states that “only a loss of control room habitability will cause a transfer of primary command and control to the SSF.”

LAR Section V.2.7 states in part:

"Control room abandonment is only considered for cases where the Control Room environment (temperature and smoke) reaches the criteria specified in NUREG/CR 6850. For non-abandonment cases credit may be taken at the Primary Control Station (PCS) as needed to control functions impacted for a given Control Room panel fire. Credit for Control Room actions associated with components not impacted by the fire is allowed for the non-abandonment scenarios."

The presentation on April 14, 2015, described the fire response for SSF Areas located outside of the MCR. For the Deterministic Fire Analysis, the entire Fire Area (FA) was assumed to be impacted by the fire. For such a fire, a transfer of Command and Control to the SSF would be required to reach a Safe and Stable condition. The procedures and actions used to transfer to the SSF and operate the SSF were described during the April 14, 2015 meeting. These procedures and actions are also described in other RAI responses following the meeting.

As discussed in the April 14, 2015, meeting, whereas the Deterministic Fire Analysis assumes that the entire FA is impacted by the fire, most of the fires evaluated in the Fire PRA do not result in a full room burnout of the FA. As such, there may be equipment available to mitigate the fire that can be operated from the MCR. As described during the April 14, 2015, meeting, the operators will attempt to use this equipment first. Should this attempt fail, the operators will activate the SSF. Some SSF functions, such as RCP seal cooling, can be performed without a transfer of Command and Control. In other words, whereas there are operators in the SSF who are operating SSF equipment to maintain RCP seal cooling, there are other operators located in the MCR who are maintaining Command and Control by operating available mitigating equipment (e.g., maintain secondary side heat removal).

The response to PRA RAI 13 states that control room habitability is the only cause for transferring primary command and control. Whereas primary command and control was not defined in the PRA RAI 13 response, the statement was written with the understanding that primary command and control is only transferred from the MCR when all of the operators are forced to abandon the MCR. This understanding was based on input that one or more operators will remain in the MCR unless MCR habitability is a concern. Going forward, the definition of primary command and control at the beginning of this response will be used for both the Fire PRA and the Deterministic Fire Analysis.

Using the definition stated at the beginning of this response, any scenario where the operators use the full capabilities of the SSF requires a transfer of Command and Control to the SSF. In the fire PRA model a loss of MCR habitability requires Control Room abandonment and subsequent transfer of Command and Control to the SSF. For all other cases, the operators can use a combination of the available mitigating equipment from the MCR and the SSF. This is consistent with LAR Section V.2.7 and

the intent of the PRA RAI 13 response.

For fires that require the full SSF capability but do not result in a loss of MCR habitability, the operators may choose to maintain available personnel in the MCR. These operators will have access to the full array of instruments available in the MCR and will also be able to direct other plant responses. However, these operators are not maintaining Command and Control in the MCR and the electrical design of the SSF transfer ensures that these MCR activities will not prevent the ability of the SSF to achieve and maintain Safe and Stable conditions. Therefore, for the purposes of maintaining Safe and Stable conditions, the MCR has been abandoned.

i) Where the SSF was determined to be the assured train for a given FA, VFDRs were generated based on separation conflicts with deterministic success logics associated with SSF functions (i.e., impacts on shutdown from the SSF, the primary control station). VFDRs are not generated for other fire-affected shutdown trains in the given FA.

The VFDRs were then reviewed to map the identified component and the function impacted by the VFDR to the appropriate component or function in the FPRA. As discussed in the response to PRA RAI 13.01.b, the variant case will fail components based on whether the associated cables are damaged by the fire. The compliant case breaks this association between the component and its cables by "toggling" the basic event, which ensures that the components are available for mitigation. No additional equipment is assumed failed in the compliant case.

PRA RAI 19.a.01

The response to PRA RAI 19.a states that the response to PRA RAI 03 would use the methods in draft FAQ 14-0009 to evaluate propagation of fires outside of well-sealed and robustly-secured motor control centers (MCCs) greater than 440 volts. The analyses described in draft FAQ 14-0009 has changed considerably since the first draft dated July 1, 2014. To resolve this issue use the method described in the final version of FPRA FAQ 14-0009 (ADAMS Accession No. ML15119A176) in the FPRA and provide updated results as part of the aggregate change-in-risk analysis requested in PRA RAI 03.

McGuire Response:

The propagating MCC fire scenarios included in the quantification supporting the PRA RAI 03 response dated March 13, 2015, were based on draft F of FPRA FAQ 14-0009. Subsequent to March 13, 2015, the MNS Fire PRA model has been updated to incorporate changes made in response to the additional RAIs dated June 18, 2015, which includes changes made to incorporate the final version of FPRA FAQ 14-0009 (ML15118A810). The impact on the MNS Fire PRA results due to the final version of FPRA FAQ 14-0009 will be included in the quantification supporting the updated PRA RAI 03 response.

PRA RAI 19.b.01

The response to PRA RAI 19.b states that internal spurious operations (hot shorts) within well-sealed MCCs were removed from the FPRA when the unrelated severity factor of 0.2 was removed. The RAI response asserts that the results are overly conservative after removing the severity factor to justify removing hot shorts. A general claim of overly conservative is insufficient to justify changing modelling assumptions. Guidance on including fire-induced spurious hot short in the panel wiring's conductor bundles within a cabinet is available in NUREG/CR-7150, "Joint Assessment of Cable Damage and Quantification of Effects from Fire (JACQUE-FIRE)," Volume 1, Section 6.6.3, and Volume 2, Section 7.4. To resolve this issue apply the guidance in NUREG/CR-7150 in the FPRA and provide updated results as part of the aggregate change-in-risk analysis requested in PRA RAI 03.

McGuire Response:

Subsequent to March 13, 2015, the MNS Fire PRA model has been updated to incorporate changes made in response to the additional RAIs dated June 18, 2015, which includes changes made to the analysis of spurious operations for non-severe (i.e., non-propagating) MCC fire scenarios. The internal hot short-induced spurious operation probabilities were applied to the internal spurious events using the guidance contained in NUREG/CR-7150 for panel wiring. The impact on the MNS Fire PRA results due to spurious operations for non-severe (i.e., non-propagating) MCC fires will be included in the quantification supporting the updated PRA RAI 03 response.

PRA RAI 24

During final review of the implementation items, it was discovered that McGuire's Implementation Item 12 program does not provide confidence that the final change in risk from transition meets the acceptance guidelines. The licensee proposes that "If the revised Fire PRA shows a risk increase of greater than 1E-07 for CDF or 1E-08 for LERF then enter the results into the corrective action program to determine the cause of the risk increase and determine corrective actions." Entering an increase greater than the self-approval guidelines into the corrective action program does not provide confidence that the final result of any corrective action will be a transition change in risk that is consistent with the acceptance guidelines. Furthermore, unanticipated risk increases greater than the self-approval guideline generally need to be reduced by fixing the cause of exceedance (i.e., the change itself), otherwise the results and the proposed change (if any) should be submitted to the NRG staff according to the license condition. Provide an Implementation Item to verify that the cumulative change-in-risk does not exceed RG 1.174 guidelines once all the modifications and procedural implementation items are completed.

McGuire Response:

Implementation Item 12 will be updated to state the following:
"Following installation of the risk related modifications and the as-built installation details, additional refinements surrounding the modifications and procedural implementation items (Table S-3 Items 13 and 14) will be incorporated into the Fire PRA model and Internal Events model, as required. In addition, a verification will be performed to confirm that the risk results are not appreciably changed. If the as-built change-in-risk estimates exceed the RG 1.174 acceptance guidelines, the responsible feature will be identified and evaluated. Actions taken to address such a case may be one or more of the following: 1) implementing additional modifications, 2) refining the analytical estimates, or 3) requesting that exceeding the guidelines be deemed acceptable in a new LAR." Completion will be 180 days after the last risk related modification is completed.

The applicable changes to LAR Table S-3 will be submitted to the NRC during the final RAI response letter, which is due by August 20, 2015.

ENCLOSURE 2

Duke Energy Response Timeline for Remaining RAIs

Scheduled due dates for the responses to remaining MNS NFPA 805 LAR RAIs

RAI number	Response Due Date
PRA RAI 03.a.01	8/20/2015
PRA RAI 03.b.01	8/20/2015
PRA RAI 12.01.a	8/20/2015
PRA RAI 13.01.c	8/20/2015
PRA RAI 13.02.a/b/c	8/20/2015
FM RAI 01.j.01	8/20/2015
FM RAI 01.k.01	8/20/2015
FM RAI 02.b.01	8/20/2015
FM RAI 02.c.01	8/20/2015