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ONS-2016-028

10 CFR 50.90
10 CFR 50 Appendix E

March 18, 2016

Attn: Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Duke Energy Carolinas, LLC (Duke Energy)

Oconee Nuclear Station, Units 1, 2, and 3
Docket Numbers 50-269, 50-270, and 50-287
Renewed Operating License Nos. DPR-38, DPR-47, and DPR-55

Subject: Response to Request for Additional Information (RAI) Regarding the License Amendment Request (LAR) to Change the Oconee Nuclear Station (ONS) Emergency Plan to Upgrade ONS Emergency Action Levels Based on NEI 99-01, Revision 6

License Amendment Request No. 2015-04

By letter dated June 23, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML 15183A060), Duke Energy requested approval of a proposed change to the Emergency Action Levels (EALs) used at Oconee Nuclear Station (ONS). Duke Energy proposes to revise their current ONS EAL scheme to one based upon Nuclear Energy Institute (NEI) document NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors," Revision 6 (ADAMS Accession No. ML 12326A805).

The NRC staff reviewed the request and determined that additional information is needed to complete their review. A letter requesting additional information was sent December 15, 2015 (ADAMS Accession No. ML 15345A398). Duke Energy responded to this request by letter dated February 4, 2016 (ADAMS Accession No. ML 16041A237). The NRC issued an additional RAI by letter dated February 26, 2016 (ADAMS Accession No. ML ML16056A583). The enclosure provides the ONS response to this most recent RAI.

ONS anticipates that the LAR, as approved, will be effective upon issuance and requests implementation by March 31, 2017, due to the need for operator training. This request supersedes the previous ONS request for a 180-day implementation period.

This letter makes no new commitments or changes to existing commitments. Should you have any questions regarding this request, please contact Chris Wasik, Regulatory Affairs Manager, at (864) 873-5789.

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NRR

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I declare under penalty of perjury that the foregoing is true and correct. Executed on the 18th day of March, 2016.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott L. Batson", with a stylized flourish extending from the end.

Scott L. Batson
Vice President
Oconee Nuclear Station

Enclosure:
Response to Request for Additional Information

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cc w/ Enclosures:

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Mr. Eddy Crowe
NRC Senior Resident Inspector
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Ms. Susan Jenkins, Manager
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cc w/o Enclosures:

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ENCLOSURE

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST NO. 2015-04

OCONEE NUCLEAR POWER STATION, UNIT 1, 2, AND 3

DOCKET NOS 50-269, 50-270, and 50-287

RENEWED LICENSE NOS. DPR-38, DPR-47, and DPR-55

RAI-24

Please explain, in greater detail, the response to RAI-05, submitted by letter dated February 4, 2016. In particular, please explain why the values and thresholds developed for EALs RU1, RA 1, RS 1, and RG 1, in accordance with NEI 99-01, Revision 6, are about a factor of 7 different than those developed for your present EAL scheme which used the NUMARC/NESP-007 EAL scheme development guidance. The assumptions for the NUMARC and NEI guidance are essentially the same (except using different dose calculation method(s)), therefore this less conservative value(s) for the EALs presently in place requires more information to allow the NRC staff to better understand not only what is proposed but also why it is so different than what is currently approved, and if the currently approved EALs have been under-conservative since approval.

Duke Energy Response

In NEI 99-01 Rev. 6, the Developer Notes for AA1, AS1, and AG1 it is stated that acceptable sources of information for assumed meteorological data, atmospheric dispersion factors, and isotopic mix *"include, but are not limited to, the RETS/ODCM and values used in the site's emergency dose assessment methodology."* Additionally, the Developer Notes for AU1 state that as appropriate, the Radiological Effluent Technical Specifications (RETS) or Offsite Dose Calculation Manual (ODCM) methodology should be used for establishing the monitor thresholds. As such, in the development of the effluent monitor threshold value for RU1.1, Oconee's ODCM methodology was used. In regards to RA1.1, RS1.1 and RG1.1, Oconee's emergency dose assessment software, Unified Rascal Interface (URI), was used to develop the effluent monitor threshold values.

The currently approved EALs were developed in accordance with the NRC-approved guidance in NUMARC/NESP-007, Rev. 2, and they are conservative.

Key differences in the calculation of the NEI 99-01 Rev. 6 EAL radiation monitor threshold values from the current NUMARC/NESP-007 Rev. 2 values are summarized in Table 1 below.

Table 1

INPUT		Proposed (NEI 99-01 Rev.6)	Current (NUMARC/NESP-007 Rev.2)
1	Source Term	URI/RASCAL values as described in NUREG-1940	ODCM values
2	Dose Conversion	ICRP-60 values in URI/RASCAL	Reg. Guide 1.109 values
3*	Dispersion Model	URI/RASCAL dispersion methodology with model-derived X/Q to the affected sector for the entire release duration using median wind speed and stability class.	ODCM methodology using highest annual average X/Q of 16 directional sectors.

* For RU1.1 difference is due to 1 and 2 only.

Given the differences noted in Table 1 above, a change of about one order of magnitude (10^1) in the EAL effluent monitor threshold values is reasonable and well below the range (10^2 to 10^4) of the most likely dose assessment uncertainty factors discussed in NUREG/CR-5247.

For example, basing the X/Q on a single sector for the entire release duration using URI/RASCAL dispersion methodology results in a X/Q value that is significantly larger than an ODCM-based annual average X/Q. As discussed in NEI 99-01, Rev 4, Appendix A, *"the sector annual average X/Q value is normalized for the percentage of time that the wind blows into that sector. In an actual event, the wind direction may be into the affected sector for the entire release duration. Many sites experience typical sector X/Qs that are 10-20 times higher than the calculated annual average for the sector."*