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

August 26, 2021

Mr. Steve Snider
Vice President, Nuclear Engineering
Duke Energy Corporation
526 South Church Street, EC-07H
Charlotte, NC 28202

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2; MCGUIRE NUCLEAR STATION, UNITS 1 AND 2; OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3; BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2; SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1; AND H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 – ISSUANCE OF AMENDMENTS FOR COMMON EMERGENCY PLAN CONSISTENT WITH NUREG-0654, REVISION 2 (EPID L-2020-LLA-0198)

Dear Mr. Snider:

The U.S. Nuclear Regulatory Commission (NRC) has issued the following enclosed amendments: Amendment Nos. 309 and 305 to Renewed Facility Operating License (RFOL) Nos. NPF-35 and NPF-52 for the Catawba Nuclear Station, Units 1 and 2, respectively; Amendment Nos. 319 and 298 to RFOL Nos. NPF-9 and NPF-17 for the McGuire Nuclear Station, Units 1 and 2, respectively; Amendment Nos. 422, 424, and 423 to RFOL Nos. DPR-38, DPR-47, and DPR-55 for the Oconee Nuclear Station, Units 1, 2, and 3, respectively; Amendment Nos. 306 and 334 to RFOL License Nos. DPR-71 and DPR-62 for Brunswick Steam Electric Plant, Units 1 and 2, respectively; Amendment No. 186 to RFOL No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1; and Amendment No. 270 to RFOL No. DPR-23 for the H. B. Robinson Steam Electric Plant, Unit 2.

These amendments are issued in response to your application dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, and revise and replace the site emergency plans of these plants with the Duke Energy Common Emergency Plan (DECEP) with site-specific annexes. The DECEP was developed using the guidance in NUREG-0654/ FEMA-REP-1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” Revision 2.

A copy of the NRC staff's Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's monthly *Federal Register* notice.

If you have any questions, please contact me at (301) 415-8480 or by e-mail at Andrew.Hon@nrc.gov.

Sincerely,

/RA/

Andrew Hon, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-413, 50-414, 50-369,
50-370, 50-269, 50-270, 50-287,
50-325, 50-324, 50-400, and 50-261

Enclosures:
1. Amendment No. 309 to NPF-35
2. Amendment No. 305 to NPF-52
3. Amendment No. 319 to NPF-9
4. Amendment No. 298 to NPF-17
5. Amendment No. 422 to DPR-38
6. Amendment No. 424 to DPR-47
7. Amendment No. 423 to DPR-55
8. Amendment No. 306 to DPR-71
9. Amendment No. 334 to DPR-62
10. Amendment No. 186 to NPF-63
11. Amendment No. 270 to DPR-23
12. Safety Evaluation

cc: See next page

cc: Mr. Robert T. Simril
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-413

CATAWBA NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 309
Renewed License No. NPF-35

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

   A. The application for amendment to the Catawba Nuclear Station, Unit 1 (the facility) Renewed Facility Operating License No. NPF-35 filed by Duke Energy Carolinas, LLC, acting for itself, and North Carolina Electric Membership Corporation (licensees), dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

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

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

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

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

2. Accordingly, by Amendment No. 309, Renewed Facility Operating License No. NPF-35 is hereby amended to authorize revision to the Emergency Plan as set forth in the licensee's application dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, and evaluated in the NRC staff's safety evaluation enclosed with this amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael F. King

Digitally signed by Michael F. King
Date: 2021.08.26 11:34:08 -04'00'

Mike F. King, Deputy Director
Office of Nuclear Reactor Regulation

Date of Issuance: August 26, 2021

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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-414

CATAWBA NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 305
Renewed License No. NPF-52

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

   A. The application for amendment to the Catawba Nuclear Station, Unit 2 (the facility) Renewed Facility Operating License No. NPF-52 filed by Duke Energy Carolinas, LLC, acting for itself, North Carolina Municipal Power Agency No. 1 and Piedmont Municipal Power Agency (licensees), dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

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

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

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

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

2. Accordingly, by Amendment No. 305, Renewed Facility Operating License No. NPF-52 is hereby amended to authorize revision to the Emergency Plan as set forth in the licensee's application dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, and evaluated in the NRC staff's safety evaluation enclosed with this amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael F. King

Digitally signed by Michael F. King
Date: 2021.08.26 11:34:38 -04'00'

Mike F. King, Deputy Director
Office of Nuclear Reactor Regulation

Date of Issuance: August 26, 2021

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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-369

MCGUIRE NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 319
Renewed License No. NPF-9

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

   A. The application for amendment to the McGuire Nuclear Station, Unit 1 (the facility), Renewed Facility Operating License No. NPF-9, filed by Duke Energy Carolinas, LLC (licensee), dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

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

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

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

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

2. Accordingly, by Amendment No. 319, Renewed Facility Operating License No. NPF-9 is hereby amended to authorize revision to the Emergency Plan as set forth in the licensee's application dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, and evaluated in the NRC staff's safety evaluation enclosed with this amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael F. King

Digitally signed by Michael F. King
Date: 2021.08.26 11:35:08 -04'00'

Mike F. King, Deputy Director
Office of Nuclear Reactor Regulation

Date of Issuance: August 26, 2021

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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-370

MCGUIRE NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 298
Renewed License No. NPF-17

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

   A. The application for amendment to the McGuire Nuclear Station, Unit 2 (the facility), Renewed Facility Operating License No. NPF-17, filed by Duke Energy Carolinas, LLC (the licensee), dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

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

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

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

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

2. Accordingly, by Amendment No. 298, Renewed Facility Operating License No. NPF-17 is hereby amended to authorize revision to the Emergency Plan as set forth in the licensee's application dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, and evaluated in the NRC staff's safety evaluation enclosed with this amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael F. King

Digitally signed by Michael F. King
Date: 2021.08.26 11:35:39 -04'00'

Mike F. King, Deputy Director
Office of Nuclear Reactor Regulation

Date of Issuance: August 26, 2021

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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-269

OCONEE NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 422
Renewed License No. DPR-38

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

   A. The application for amendment to the Oconee Nuclear Station, Unit 1 (the facility), Renewed Facility Operating License No. DPR-38, filed by Duke Energy Carolinas, LLC (the licensee), dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

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

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

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

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

2. Accordingly, by Amendment No. 422, Renewed Facility Operating License No. DPR-38 is hereby amended to authorize revision to the Emergency Plan as set forth in the licensee's application dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, and evaluated in the NRC staff's safety evaluation enclosed with this amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael F. King

Digitally signed by Michael F. King
Date: 2021.08.26 11:36:02 -04'00'

Mike F. King, Deputy Director
Office of Nuclear Reactor Regulation

Date of Issuance: August 26, 2021

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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-270

OCONEE NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 424
Renewed License No. DPR-47

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

   A. The application for amendment to the Oconee Nuclear Station, Unit 2 (the facility), Renewed Facility Operating License No. DPR-47, filed by Duke Energy Carolinas, LLC (the licensee), dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

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

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

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

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

2. Accordingly, by Amendment No. 424, Renewed Facility Operating License No. DPR-47 is hereby amended to authorize revision to the Emergency Plan as set forth in the licensee's application dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, and evaluated in the NRC staff's safety evaluation enclosed with this amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael F. King

Digitally signed by Michael F. King
Date: 2021.08.26 11:36:26 -04'00'

Mike F. King, Deputy Director
Office of Nuclear Reactor Regulation

Date of Issuance: August 26, 2021

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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-287

OCONEE NUCLEAR STATION, UNIT 3

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 423
Renewed License No. DPR-55

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

   A. The application for amendment to the Oconee Nuclear Station, Unit 3 (the facility), Renewed Facility Operating License No. DPR-55, filed by Duke Energy Carolinas, LLC (the licensee), dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

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

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

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

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

2. Accordingly, by Amendment No. 423, Renewed Facility Operating License No. DPR-55 is hereby amended to authorize revision to the Emergency Plan as set forth in the licensee's application dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, and evaluated in the NRC staff's safety evaluation enclosed with this amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael F. King

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Date: 2021.08.26 11:36:54 -04'00'

Mike F. King, Deputy Director
Office of Nuclear Reactor Regulation

Date of Issuance: August 26, 2021

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

DUKE ENERGY PROGRESS, LLC

DOCKET NO. 50-325

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 306
Renewed License No. DPR-71

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

   A. The application for amendment filed by Duke Energy Progress, LLC (the licensee), dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

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

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

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

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

2. Accordingly, by Amendment No. 306, Renewed Facility Operating License No. DPR-71 is hereby amended to authorize revision to the Emergency Plan as set forth in the licensee's application dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, and evaluated in the NRC staff's safety evaluation enclosed with this amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael F. King

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Date: 2021.08.26 11:37:18 -04'00'

Mike F. King, Deputy Director
Office of Nuclear Reactor Regulation

Date of Issuance: August 26, 2021

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

DUKE ENERGY PROGRESS, LLC

DOCKET NO. 50-324

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 334
Renewed License No. DPR-62

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

   A. The application for amendment filed by Duke Energy Progress, LLC (the licensee), dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

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

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

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

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

2. Accordingly, by Amendment No. 334, Renewed Facility Operating License No. DPR-62 is hereby amended to authorize revision to the Emergency Plan as set forth in the licensee's application dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, and evaluated in the NRC staff's safety evaluation enclosed with this amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael F. King

Digitally signed by Michael F. King
Date: 2021.08.26 11:37:45 -04'00'

Mike F. King, Deputy Director
Office of Nuclear Reactor Regulation

Date of Issuance: August 26, 2021

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

DUKE ENERGY PROGRESS, LLC

DOCKET NO. 50-400

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 186
Renewed License No. NPF-63

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

   A. The application for amendment by Duke Energy Progress, LLC (the licensee), dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

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

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

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

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

2. Accordingly, by Amendment No. 186, Renewed Facility Operating License No. NPF-63 is hereby amended to authorize revision to the Emergency Plan as set forth in the licensee's application dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, and evaluated in the NRC staff's safety evaluation enclosed with this amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael F. King

Digitally signed by Michael F. King
Date: 2021.08.26 11:38:13 -04'00'

Mike F. King, Deputy Director
Office of Nuclear Reactor Regulation

Date of Issuance: August 26, 2021

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

DUKE ENERGY PROGRESS, LLC

DOCKET NO. 50-261

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 270
Renewed License No. DPR-23

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

   A. The application for amendment by Duke Energy Progress, LLC (the licensee), dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

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

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

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

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

2. Accordingly, by Amendment No. 270, Facility Operating License No. DPR-23 is hereby amended to authorize revision to the Emergency Plan as set forth in the licensee's application dated September 3, 2020, as supplemented by letters dated March 11, 2021, and May 4, 2021, and evaluated in the NRC staff's safety evaluation enclosed with this amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael F. King

Digitally signed by Michael F. King
Date: 2021.08.26 11:38:38 -04'00'

Mike F. King, Deputy Director
Office of Nuclear Reactor Regulation

Date of Issuance: August 26, 2021

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

DUKE ENERGY CAROLINAS, LLC AND DUKE ENERGY PROGRESS, LLC

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-413, 50-414

AMENDMENT NOS. 309 AND 305 TO RENEWED FACILITY OPERATING

LICENSE NOS. NPF-35 AND NPF-52

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-369, 50-370

AMENDMENT NOS. 319 AND 298 TO RENEWED FACILITY OPERATING

LICENSE NOS. NPF-9 AND NPF-17

OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3

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

AMENDMENT NOS. 422, 424, AND 423 TO RENEWED FACILITY OPERATING

LICENSE NOS. DPR-38, DPR-47, AND DPR-55

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2

DOCKET NOS. 50-325 AND 50-324

AMENDMENTS NOS. 306 AND 334 TO RENEWED FACILITY OPERATING

LICENSE NOS. DPR-71 AND DPR-62

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-400

AMENDMENT NO. 186 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-63

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

DOCKET NO. 50-261

AMENDMENT NO. 270 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-23

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1.0 INTRODUCTION

By letter dated September 3, 2020 (Reference 1), as supplemented by letters dated March 11, 2021, and May 4, 2021 (References 2 and 3), Duke Energy Carolinas, LLC and Duke Energy Progress, LLC (collectively referred to as Duke Energy) submitted a license amendment request (LAR) for U.S. Nuclear Regulatory Commission (NRC, the Commission) review and prior approval pursuant to Section 50.54(q) of Title 10 of the *Code of Federal Regulations* (10 CFR). The proposed amendment would revise the site emergency plans for the Brunswick Steam Electric Plant Units 1 and 2 (BNP), Catawba Nuclear Station Units 1 and 2 (CNS), H. B. Robinson Steam Electric Plant Unit 2 (RNP), McGuire Nuclear Station Units 1 and 2 (MNS), Oconee Nuclear Station Units 1, 2 and 3 (ONS), and Shearon Harris Nuclear Power Plant Unit 1 (HNP). Specifically, a new Duke Energy Common Emergency Plan (DECEP) with site-specific annexes is proposed to replace the site-specific emergency plans. The proposed DECEP with site-specific annexes was developed using the guidance in NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 2, (hereafter referred to as NUREG-0654) dated December 2019 (Reference 4).

The supplemental letters dated March 11, 2021, and May 4, 2021, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* (FR) on October 6, 2020, (85 *FR* 63149).

2.0 REGULATORY EVALUATION

The regulatory requirements and guidance, on which the NRC staff based this review, are provided below.

2.1 Regulations

The planning standards, as set forth in 10 CFR 50.47(b), establish the requirements that the onsite and offsite emergency response plans must meet in order for the NRC staff to find there is reasonable assurance that the licensee will take adequate protective measures in the event of a radiological emergency.

In addition, Appendix E to 10 CFR Part 50, "Emergency Planning and Preparedness for Production and Utilization Facilities," Section IV.1, states, in part, that "…the emergency response plans submitted by an applicant for a nuclear power reactor operating license under this part, or for an early site permit (as applicable) or combined license under 10 CFR part 52, shall contain information needed to demonstrate compliance with the standards described in § 50.47(b), and they will be evaluated against those standards."

2.2 Guidance

- NUREG-0654/FEMA-REP-1, Revision 2, provides specific acceptance criteria that the NRC has determined as an acceptable means of complying with the standards in 10 CFR 50.47. These criteria provide a basis for NRC licensees (and applicants), and State and local governments to develop acceptable radiological emergency preparedness plans.

- Office of Nuclear Security and Incident Response (NSIR)/Division of Preparedness (DPR) Interim Staff Guidance (ISG) document, NSIR/DPR-ISG-01, "Interim Staff Guidance, Emergency Planning for Nuclear Power Plants" (Reference 5), provides updated guidance for addressing emergency planning requirements for nuclear power plants, based on changes to emergency preparedness regulations in 10 CFR 50.47 and Appendix E to 10 CFR Part 50, which were published on November 23, 2011 (76 FR 72560).

- NUREG-0696, "Functional Criteria for Emergency Response Facilities," dated February 1981 (Reference 6), describes the facilities and systems to be used by nuclear power plant licensees to improve responses to emergencies.

- NUREG-0737, Supplement 1, "Clarification of TMI [Three Mile Island] Action Plan Requirements – Requirements for Emergency Response Capability (Generic Letter No. 82-33)," January 1983 (Reference 7).

3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's regulatory and technical analyses in support of its proposed DECEP with site-specific annexes, as described in its application. The proposed DECEP with site-specific annexes is structured to follow the general format of NUREG-0654. The following NRC staff technical evaluation of the LAR is structured to reflect the 16 planning standards in Section II, "Planning Standards and Evaluation Criteria," of NUREG-0654, and addresses the requirements in 10 CFR 50.47(b), including any applicable requirements in Appendix E to 10 CFR Part 50.

3.1 Background

As stated in its application, the proposed DECEP with site-specific annexes was developed based upon the updated NRC guidance contained in NUREG-0654. This includes revisions to align staffing with the functions and major task delineations, specifically the on-shift and minimum augmenting emergency response organization (ERO) assigned within these functional areas. Consistent with NUREG-0654, the proposed changes would remove references to non-minimum augmented ERO positions from the proposed DECEP with site-specific annexes while retaining appropriate positions in the applicable procedures.

For each of the sites, the LAR includes an enclosure (i.e., Enclosures 1-6), which describes the licensee's evaluation of the proposed emergency plan changes applicable to the respective site. Duke Energy states that the majority of the proposed changes consist of administrative wording changes that do not change the intent or level of commitment by Duke Energy. In addition, the changes provide for documentation of commitments to maintain alignment with NUREG-0654 and consistency across the Duke Energy fleet. The licensee also included, in Attachment 1 to its LAR, a Table, "Fleet Summary of Reductions in Effectiveness," listing all changes to the individual site emergency plans that the licensee determined would involve a reduction in effectiveness. The changes are discussed below under each of the applicable evaluation criteria in the safety evaluation sections entitled "Proposed Changes to Site-Specific Emergency Plans."

Duke Energy identified specific changes in Section 2.1.1, "Common Emergency Plan Comparison Summary," of each site-specific enclosure, "Evaluation of Proposed Changes," as

needing NRC approval. The NRC staff reviewed each of these specific changes in the applicable NUREG-0654 Evaluation Criterion sub-sections of this safety evaluation. Finally, as summarized in Enclosure 14, "Offsite Response Organization Concurrence," of the LAR, the licensee has provided copies of its DECEP with site-specific annexes to State and local governmental agencies with emergency planning and preparedness responsibilities for the affected sites; each of the State and local governmental agencies confirmed that they do not object to the licensee's adoption of the DECEP with site-specific annexes.

3.2 Evaluation

Section II, "Planning Standards and Evaluation Criteria," of NUREG-0654, contains evaluation criteria for each planning standard of 10 CFR 50.47(b). The following discussion provides the results of NRC staff's review of the proposed DECEP with Site-Specific Emergency Plan Annexes and the staff's finding that all 16 Planning Standards and Evaluation Criteria of NUREG-0654 are met:

A. Assignment of Responsibility
B. Emergency Response Organization
C. Emergency Response Support and Resources
D. Emergency Classification System
E. Notification Methods and Procedures
F. Emergency Communications
G. Public Education and Information
H. Emergency Facilities and Equipment
I. Accident Assessment
J. Protective Response
K. Radiological Exposure Control
L. Medical and Public Health Support
M. Recovery and Reentry
N. Exercises and Drills
O. Radiological Emergency Response Training
P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

3.2.1 Criterion II.A, "Assignment of Responsibility"

NUREG-0654, Evaluation Criterion II.A, addresses planning standard 10 CFR 50.47(b)(1), which states:

> Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

Section IV.A of Appendix E to 10 CFR Part 50, requires, in part, that the organization for coping with radiological emergencies be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization and the means for notification of such individuals in the event of an emergency.

The requirements of 10 CFR 50.47(b)(1) and the applicable requirements of Section IV.A of Appendix E to 10 CFR Part 50 are addressed in Section A, “Assignment of Responsibility,” of the proposed DECEP and site-specific annexes.

3.2.1.1 Common Emergency Plan

The proposed DECEP describes the assignment of responsibility to Duke Energy, and State and county organizations within the Emergency Planning Zones (EPZs) for the Duke Energy sites. NUREG-0654 Evaluation Criteria A.1 through A.5 provide the primary responsibilities for emergency response by Duke Energy and by State and county organizations within the EPZs. The interrelationships between Duke Energy, State, and county offsite response organizations (OROs) and local services support (e.g., fire, medical and law enforcement) is illustrated in a block diagram in Section B.4. of the proposed DECEP.

The proposed DECEP identifies the individuals who will be in charge of the emergency response. It further identifies the responsibilities of key individuals responsible for command and control, alerting and notification, communications, public information, accident assessment, protective response (including the authority to request Federal assistance and to initiate other protective actions), and radiological exposure control.

The proposed DECEP relies on Federal, State, and local organizations to provide emergency response assistance. Duke Energy states that letters of agreement (LOA) are not necessary from Federal, State, and county agencies that are mandated by charter, regulation, or law to protect public health and safety. Duke Energy and entities that are expected to provide emergency response support have developed memoranda of understanding (MOUs) and/or LOAs. MOUs and LOAs are referenced by organization and title in the site-specific annexes to the DECEP, with the actual MOUs and LOAs maintained on file at the applicable location. A contract/purchase order with a private contractor is considered acceptable in lieu of a MOU or LOA for the specified duration of the contract.

The proposed DECEP states that Duke Energy maintains an ERO that is capable of providing continuous operation for an extended period of time. The Emergency Director is the individual responsible for assuring continuity of resources (technical, administrative, and material).

3.2.1.2 Emergency Plan Annexes

The proposed DECEP site-specific annexes have a listing of the county organizations with an emergency response role. Each site-specific annex has a list of LOAs/MOUs that are maintained by each site with the listed organizations.

3.2.1.3 Proposed Changes to Site-Specific Emergency Plans

The licensee stated that there are no proposed changes to the facilities’ site-specific emergency plans that involve a reduction in effectiveness under this Evaluation Criterion.

3.2.1.4 Criterion II.A Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy has identified the primary responsibilities for emergency response by Duke Energy, and State and local organizations within the EPZs, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has

staff to respond and to augment its initial response on a continuous basis. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(1) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.2 Criterion II.B, "Emergency Response Organization"

NUREG-0654, Evaluation Criterion II.B, addresses planning standard 10 CFR 50.47(b)(2), which states:

> On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available, and the interfaces among various onsite response activities and offsite support and response activities are specified.

As noted above, Section IV.A of Appendix E to 10 CFR Part 50 requires, in part, that the organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization and the means for notification of such individuals in the event of an emergency.

The requirements of 10 CFR 50.47(b)(2) and applicable requirements of Section IV.A of Appendix E to 10 CFR Part 50 are addressed in portions of Section B, "Emergency Response Organization," of the proposed DECEP and site-specific annexes.

3.2.2.1 Common Emergency Plan

The proposed DECEP describes the primary responsibilities of the ERO. The NRC staff verified that the proposed DECEP describes ERO staffing that is based on the guidance in NUREG-0654. This description includes ERO facility staffing and primary emergency planning and preparedness (EP) responsibilities.

In conjunction with this LAR, the licensee performed and documented an on-shift staffing analysis per 10 CFR Part 50, Appendix E, Section IV.A.9 at each site. The site-specific on-shift staffing analysis is maintained as part of the site-specific annexes to the proposed DECEP.

The proposed DECEP states that a Shift Manager is in direct charge of shift plant operations and is responsible for the actions of the on-shift crew. In an emergency, the Shift Manager assumes the responsibility of overall ERO command and control and takes necessary actions to identify and respond to the emergency until relieved. The Shift Manager, until relieved, has the responsibility and authority to immediately and unilaterally initiate emergency actions, including providing protective action recommendations (PARs). The proposed DECEP defines non-delegable responsibilities as: event classification; PARs for the general public; and notification of offsite authorities. The responsibility for event declaration and NRC notifications is transferred to the Technical Support Center (TSC) Emergency Coordinator; PARs for the general public, and notification of State and county offsite authorities are transferred to the Emergency Operations Facility (EOF) Director. Both the TSC and EOF are activated simultaneously upon the declaration of an Alert or higher emergency classification level (ECL).

The proposed DECEP includes a block diagram that illustrates the interfaces between and among the licensee, Federal, State and county offsite response organizations, and local services support. The proposed DECEP also described the interface between an Incident

Command Post (ICP) and Duke Energy for events where the establishment of an ICP would be appropriate.

3.2.2.2 Emergency Plan Annexes

The site-specific annexes identify the on-shift staffing analyses and a listing of the external organizations that may be called on to provide technical assistance.

3.2.2.3 Proposed Changes to Site-Specific Emergency Plans

Duke Energy identified the following changes to the facilities' site-specific emergency plans related to this Evaluation Criterion:

- Positions listed as on-shift ERO removed or reduced based on NUREG-0654;
- Minimum augmenting ERO based on NUREG-0654 with exceptions;
- Non-minimum augmenting ERO positions no longer listed based on NUREG-0654;
- Retained TSC, Operations Support Center (OSC), and EOF minimum augmenting ERO response time requirement of 75 minutes from an Alert or higher ECL; and
- Change the designation of Radiation Protection (RP) Technician to RP Qualified Individual.

The proposed site-specific emergency plan annexes do not reference ERO staffing or the primary responsibilities for ERO staffing. The proposed changes to the DECEP are discussed in the following sections that include a section common to all Duke Energy sites with site-specific exceptions as noted. The following evaluation first addresses alignment of the proposed DECEP staffing with the EP functions as provided by NUREG-0654 and then evaluates any remaining changes to the site-specific emergency plans.

Command and Control

The proposed staffing for Command and Control is consistent with NUREG-0654 Table B-1, "Emergency Response Organization (ERO) Staffing and Augmentation Plan," with two differences. The first difference is an augmentation time of the Command and Control function within 75 minutes of the declaration of an Alert or higher ECL, while NUREG-0654 Table B-1 provides for TSC staffing within 60 minutes of the declaration of an Alert or higher ECL and EOF staffing within 60 minutes of an Site Area Emergency or higher ECL. The second difference is that the EOF Director will be augmented within 75 minutes of the declaration of an Alert or higher ECL, while NUREG-0654 Table B-1 provides for EOF augmentation within 60 minutes of the declaration of a Site Area Emergency or higher ECL.

Although different from the guidance of NUREG-0654 Table B-1, Duke Energy did not propose a change to the currently approved Command and Control ERO staffing augmentation time of within 75 minutes of an Alert or higher ECL and will continue to staff the EOF Director and the TSC Emergency Coordinator positions within 75 minutes of the declaration of an Alert or higher ECL which is consistent with the current DECEP. The NRC staff considers that staffing the Emergency Operations Director and Emergency Coordinator as an enhancement because it will ensure that the TSC and EOF EROs will be mobilized and available should an Alert classification escalate to a Site Area Emergency or higher ECL. To align with the NUREG-0654

Table B-1, Duke Energy proposed to change the title of its current Emergency Director and Control functional area to Command and Control.

The NRC staff reviewed the licensee's proposed changes to the Command and Control function and found them acceptable based on the information discussed above. The licensee provided adequate justification for the proposed change and differences from NUREG-0654 Table B-1. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and this change is acceptable.

Communications

NUREG-0654 Table B-1 recommends that following the declaration of an Alert or higher ECL, the TSC be staffed with two communicators within 60 minutes and an additional communicator, as needed, within 90 minutes. In addition, NUREG-0654 Table B-1 recommends the staffing of one communicator in the EOF within 60 minutes of declaring a Site Area Emergency or General Emergency ECL.

Duke Energy currently uses one Non-Licensed Operator to perform the Shift Communicator function. Duke Energy proposed to change the title of this individual from Non-Licensed Operator to Shift Communicator. The proposed DECEP would also remove a note that the communication task could be performed by shift personnel assigned other functions. Because Duke Energy would replace an on-shift communicator, who could be assigned other collateral duties, with a dedicated on-shift communicator, this proposed change is an enhancement. Duke Energy will continue to staff one NRC Communicator at the TSC and one Offsite Communicator at the EOF within 75 minutes of an Alert or higher ECL, as in the current site-specific emergency plans. In addition, to more closely align the proposed DECEP with the guidance provided by NUREG-0654, Duke Energy will be removing two non-minimum TSC communication positions from the proposed DECEP. Those communication positions do not impact the capability or timing to perform the Communications Function.

The NRC staff reviewed the licensee's proposed changes to the Communications Function and found them acceptable based on the information discussed above. The licensee provided adequate justification for the proposed differences from NUREG-0654 Table B-1. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and these changes are acceptable.

Radiation Protection

NUREG-0654 Table B-1 recommends one RP Technician per unit for a multi-unit site and three additional RP Technicians within 60 minutes and three additional RP Technicians within 90 minutes of an Alert or higher ECL.

The purpose of the RP Function is to: (1) provide qualified RP coverage for responders accessing potentially unknown radiological environments during emergency conditions; (2) provide in-plant surveys, and (3) control dosimetry and Radiologically Controlled Area access. Duke Energy provided its analysis of the RP Function in Section 3.2.3, "Key Function: Radiation Protection," of the LAR site-specific enclosures.

The following RP Function Table is provided to illustrate specifics related to current on-shift and augmented staffing of the RP Function for the Duke Energy sites.

RP Function Table				
	Current on-shift RP Staffing	Proposed on-shift RP Staffing	Current Augmenting RP Staffing	Proposed Augmenting RP Staffing
BNP	3	2	6	6
CNS	2	2	10	6
HNP	2	2	8	6
MNS	2	2	10	6
ONS	2	3	8	6
RNP	1	2	8	6

Duke Energy proposed to align the DECEP on-shift staffing and ERO augmentation staffing levels with that provided by NUREG-0654 Table B-1 in a table titled, “Table B-1: Duke Energy On-Shift and Augmenting ERO Staffing Plan,” in the proposed DECEP. Duke Energy did not propose to change RP augmentation time from that currently approved for each Duke Energy site.

Duke Energy states that there have been many improvements in RP since the ERO was established under NUREG-0654 guidance. These improvements include electronic access to radiologically controlled areas that does not require interface with EP personnel, self-issued electronic dosimetry, area radiation monitors that can be read remotely, and simpler and less time-consuming radiological dose assessment. These RP improvements, as described in Sections 3.1.2, “Dose Assessment and Protective Action Recommendations,” and 3.1.6, “Radiation Protection Improvements,” of the site-specific enclosures, support the proposed changes in augmentation staffing. Based on Duke Energy continuing to provide six augmenting RP Technicians within 75 minutes of an Alert or higher ECL, the NRC staff finds the proposed augmentation of the on-shift staff for the RP Function acceptable.

The proposed DECEP would change the designations of the RP Technicians to RP Qualified Individuals. In response to an NRC staff request for information, Duke Energy stated that RP Qualified Individuals are task qualified to Duke Energy RP Technician qualifications, which include the task qualifications necessary to perform the RP function described in the proposed DECEP. Because Duke Energy would continue to provide RP individuals who are qualified to perform all RP tasks that may be required in response to a radiological event, the NRC staff finds the Duke Energy change in RP personnel designation to RP Qualified Individuals acceptable.

The NRC staff reviewed the licensee’s proposed changes to the RP Function and found them acceptable based on the information discussed above. The licensee provided adequate justification for the proposed differences from NUREG-0654 Table B-1. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and these changes are acceptable.

Supervision of RP Staff and Site RP

The purpose of the supervision of RP staff and site RP functions is to: (1) evaluate and assess plant and offsite radiological data in the development of onsite protective actions and offsite PARs, until relieved; (2) recommend onsite and offsite PARs to the applicable decision-maker, until relieved; (3) direct all RP activities, including radiological field monitoring team (FMT) activities, until relieved, and (4) provide relevant information to applicable communicators who are communicating offsite PARs to OROs, until relieved. Duke Energy provided its analysis of the supervision of the RP function in Section 3.2.4, "Key Function: Supervision of Radiation Protection Staff and Site Radiation Protection," of the LAR site-specific enclosures.

NUREG-0654 Table B-1 recommends that the supervision of RP function be augmented by a Site RP Coordinator in the TSC within 60 minutes of the declaration of an Alert or higher ECL, and by a RP Manager in the EOF within 60 minutes of the declaration of a Site Area Emergency or General Emergency ECL. Currently, Duke Energy staffs an EOF Radiological Assessment Manager within 75 minutes of an Alert or higher ECL. The proposed DECEP would retain the currently approved Radiological Assessment Manager, who is responsible for the supervision of the RP Staff and Site RP Function at the EOF, and who would continue to respond within 75 minutes of an Alert or higher ECL. Duke Energy proposed to add a TSC RP Manager and an OSC RP Supervisor within 75 minutes of the declaration of an Alert or higher ECL to the DECEP. Because the proposed change would add ERO positions that are in addition to the currently approved Duke Energy Emergency Plans and is not required by NUREG-0654, the NRC staff finds the proposed change to the proposed DECEP acceptable.

The NRC staff reviewed the licensee's proposed changes to the Supervision of RP Function and found them acceptable based on the information discussed above. The licensee provided adequate justification for proposed differences from NUREG-0654 Table B-1. Specifically, Duke Energy would provide RP supervision at both the TSC and the EOF within 75 minutes of an Alert ECL which is an enhancement to the currently approved Duke Energy Emergency Plans and would also have the EOF respond on an Alert ECL declaration rather than at a Site Area Emergency ECL as provided by the guidance in NUREG-0654 Table B-1. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and these changes are acceptable.

Dose Assessments / Projections

The purpose of this function is to perform dose assessments and projections, and provide input to the Emergency Director, until relieved.

NUREG-0654 Table B-1 identifies the dose assessment/projection function as an on-shift position and clarifies that, "Other personnel may be assigned this function if no collateral duties are assigned to an individual that are beyond the capability of that individual to perform at any given time."

The current Duke Energy site emergency plans provide on-shift dose assessment capability. All Duke Energy sites provide augmentation for the Dose Assessment function. Duke Energy would use the term "Shift Dose Assessor" for all Duke Energy facilities. Currently BNP, CNS, MNS, and ONS respond to the TSC to provide augmentation for dose assessment within 75 minutes of the declaration of an Alert or higher ECL while HNP and RNP provide augmentation for dose assessment within 45 minutes of the declaration of an Alert or higher ECL. In addition to the preceding minimum ERO augmentation positions, Duke Energy currently has two Dose

Assessors that respond to the EOF as full staff positions.

The following Dose Assessment Function Table is provided to illustrate specifics related to current on-shift and augmentation staffing of the Dose Assessment Function.

Dose Assessment Function Table				
	Current on-shift Dose Assessment	**Proposed on-shift Dose Assessment**	**Current Dose Assessment Augmentation**	**Proposed Dose Assessment Augmentation**
BNP	Not on Staffing Table*	1 Shift Dose Assessor	1 Dose Assessor within 75 minutes (TSC)	1 Dose Assessor within 75 minutes (EOF)
CNS	1 Dose assessment qualified individual	1 Shift Dose Assessor	1 Dose Assessor within 75 minutes (TSC)	1 Dose Assessor within 75 minutes (EOF)
HNP	Not on Staffing Table*	1 Shift Dose Assessor	1 Dose Assessor within 45 minutes (TSC)	1 Dose Assessor within 75 minutes (EOF)
MNS	1 Dose assessment qualified individual	1 Shift Dose Assessor	1 Radiological Assessment Manager within 75 minutes (TSC)	1 Dose Assessor within 75 minutes (EOF)
ONS	1 RP Qualified Individual	1 Shift Dose Assessor	1 Dose Assessor within 75 minutes (TSC)	1 Dose Assessor within 75 minutes (EOF)
RNP	1 Shift Technical Advisor	1 Shift Dose Assessor	1 Dose Assessor within 45 minutes (TSC)	1 Dose Assessor within 75 minutes (EOF)
(*) site-specific emergency plan states control room is capable of performing the dose assessment function				

The proposed DECEP would provide for augmentation for the Shift Dose Assessor within 75 minutes of an Alert or higher ECL. Duke Energy states that the EOF is already used as the primary facility for the Dose Assessment function and further provided that BNP, CNS, MNS, and ONS have successfully used a 75-minute augmentation time with no identified overlap or overburden of the Dose Assessments/Projections function. The proposed change would remove the TSC dose assessors from the proposed DECEP and site-specific annexes and change the augmentation time for HNP and RNP from the current 45 minutes to within 75 minutes of an Alert or higher ECL. Because Duke Energy would continue to provide an individual to perform on-shift Dose Assessment and has successfully been using a 75-minute Dose Assessment augmentation at four of the six Duke Energy sites, the NRC staff finds the proposed changes for the Dose Assessment function acceptable.

The NRC staff reviewed the licensee's proposed changes to the Dose Assessments/Projections Function and found them acceptable based on the information discussed above. The licensee provided adequate justification for proposed changes which differed from NUREG-0654 Table B-1. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and this change is acceptable.

Emergency Classifications

The purpose of the emergency classification function is to evaluate plant conditions and recommend emergency classification, until relieved. Duke Energy provided its analysis of the emergency classification function in Section 3.2.6, "Key Function: Emergency Classifications," of the LAR site-specific enclosures.

NUREG-0654 Table B-1 recommends that an Emergency Classification Advisor perform this function on-shift and clarifies that: "Other personnel may be assigned this function if no collateral duties are assigned to an individual that are beyond the capability of that individual to perform at any given time." Currently, the Duke Energy site emergency plans do not specify a separate emergency classification function for the on-shift or augmenting minimum staff. The licensee proposed to identify the Shift Technical Advisor (STA) as the primary ERO individual to perform the on-shift Emergency Classifications function.

NUREG-0654 Table B-1 recommends that the on-shift Emergency Classification Advisor be augmented by a second Emergency Classification Advisor in the TSC within 60 minutes of the declaration of an Alert or higher classification level. Duke Energy proposed to assign the TSC Emergency Classification Advisor function to the TSC Operations Manager with an augmentation time of 75 minutes of an Alert or higher ECL, with the Emergency Coordinator continuing to have the non-delegable command and control responsibility for emergency classification decisions. As discussed in the LAR, Duke Energy will continue to provide augmentation for the Command and Control function within 75 minutes of the declaration of an Alert or higher ECL. Because Duke Energy would continue to provide augmentation for both the Command and Control and Emergency Classifications function within 75 minutes of the declaration of an Alert or higher ECL, the NRC staff finds the proposed Emergency Classification Advisor augmentation time of 75 minutes acceptable.

The NRC staff reviewed the licensee's proposed changes to the emergency classification function and found them acceptable based on the information discussed above. With the proposed changes, the licensee's emergency plan will provide an individual to perform the classification function. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and this change is acceptable.

Engineering

The purpose of the engineering function is to provide engineering coverage related to core/thermal hydraulics, electrical/instrumentation and control (I&C) systems and equipment, and mechanical systems and equipment, until relieved. Duke Energy provided its analysis of the engineering function in Section 3.2.7, "Key Function: Engineering," of the LAR site-specific enclosures.

NUREG-0654 Table B-1 recommends a Core/Thermal Hydraulics Engineer to evaluate reactor conditions for the on-shift engineering function and clarifies that: "Other personnel may be

assigned this function if no collateral duties are assigned to an individual that are beyond the capability of that individual to perform at any given time." Currently, Duke Energy has the STA satisfy the on-shift responsibilities for the Plant System Engineering, Repair, and Corrective Actions function, which is re-categorized as the Engineering function in NUREG-0654 Table B-1. Consistent with the re-categorization of this function in NUREG-0654 Table B-1, Duke Energy would re-categorize the Plant System Engineering, Repair, and Corrective Actions function to the Engineering Function. Duke Energy did not propose a change to on-shift staffing for the Engineering function. The NRC staff finds this proposed change acceptable because it is consistent with NUREG-0654 Table B-1.

NUREG-0654 Table B-1 recommends the TSC minimum staff for the engineering function consist of one Core/Thermal Hydraulics Engineer to support the evaluation of reactor conditions; one Mechanical Engineer for coverage of ERO-related mechanical equipment, and one Electrical/I&C Engineer for coverage of ERO-related electrical and I&C equipment. Currently, the Duke Energy site emergency plans identify one Reactor Engineer, one Mechanical Engineer, one Electrical Engineer, and an Accident Assessment Manager as minimum augmented staff for the Engineering function. Duke Energy proposed to retain the Reactor Engineer, the Mechanical Engineer, and the Electrical Engineer as the minimum staff for the Engineering function. With the exception of the HNP and RNP Reactor Engineers, all Duke Energy ERO engineers currently have an ERO augmentation time of 75 minutes from the declaration of an Alert or higher ECL. The HNP and RNP Reactor Engineers currently have an ERO augmentation time of 45 minutes from the declaration of an Alert or higher ECL.

Consistent with the guidance provided in NUREG-0654 Table B-1, Duke Energy proposed to remove the Accident Assessment Manager from the proposed DECEP Table B-1, "Duke Energy On-Shift and Augmenting ERO Staffing Plan." Duke Energy states that the Accident Assessment Manager tasks of assisting with classification, event assessment, and PARs are assigned to other minimum ERO personnel. Duke Energy proposed to maintain the Accident Assessment Manager position in an emergency plan implementing procedure. Because the Accident Assessment Manager major tasks are assigned to other minimum ERO augmentation personnel, the NRC staff finds the removal of the Accident Assessment Manager from the proposed DECEP Table B-1 acceptable.

The proposed DECEP would change the ERO response times for the HNP and RNP Reactor Engineers from 45 minutes to 75 minutes. Because the current Duke Energy emergency plan implementing procedures (EPIPs) use computer programs that generate core damage results quickly and require fewer plant data inputs, a minimum augmenting Reactor Engineer response time of earlier than 75 minutes is not required. Additionally, Duke Energy states that historic drills and exercises do not indicate performance issues with regard to STA performance for BNP, CNS, MNS, and ONS which currently have a 75-minute Reactor Engineer ERO augmentation time. Because Duke Energy has demonstrated that there were no performance issues during drills and exercises and that EPIPs provide quick results for a 75-minute Reactor Engineer ERO augmentation for BNP, CNS, MNS, and ONS, the NRC staff finds the extension of ERO augmentation time for HNP and RNP from 45 minutes to 75 minutes is acceptable.

The NRC staff reviewed the licensee's proposed changes to the Engineering function and found them acceptable based on the information discussed above. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and this change is acceptable.

Security

Duke Energy provided its analysis of the security function in Section 3.2.8, “Key Function: Security,” of the LAR site-specific enclosures.

NUREG-0654 Table B-1 recommends the on-shift security function to be provided by security staffing per the Site Security Plan. All of the current site-specific emergency plans include security personnel per the site-specific security plans and are therefore consistent with NUREG-0654 Table B-1. Duke Energy proposed to add one on-shift Security Supervisor/Alarm Station Operator (ASO) and one Security Coordinator who would respond within 75 minutes of an Alert or greater ECL to the proposed DECEP Table B-1. Because specifically referencing the Security Supervisor/ASO provides clarification and adding an augmenting Security Coordinator would provide security support during radiological events that is consistent with NUREG-0654, the NRC staff finds the proposed changes to security ERO staffing acceptable.

The NRC staff reviewed the licensee’s proposed changes to the Security Function and found them acceptable based on the information discussed above. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and this change is acceptable.

Repair Team Activities

Duke Energy provided its analysis of the repair team function in Section 3.2.9, “Key Function: Repair Team Activities,” of the LAR site-specific enclosures.

NUREG-0654 Table B-1 indicates that the following maintenance personnel should respond to the OSC to support Repair Team Activities:

- One electrician and one mechanic within 60 minutes of the declaration of an Alert or higher ECL to provide support for emergency core cooling system equipment (ECCS), event mitigation, and equipment repair.

- One I&C Technician within 90 minutes of the declaration of an Alert or higher ECL to provide assistance with logic manipulation, support for event mitigation and equipment repair, and support of digital I&C, if applicable.

Duke Energy has a Diverse and Flexible Coping (FLEX) Strategies Program that provides additional equipment and guidelines that can be used by qualified on-shift personnel for mitigating emergency conditions. Duke Energy states that FLEX strategies are implemented in FLEX Support Guidelines (FSG) which provide guidance to mitigate emergency conditions. FLEX equipment and FSGs may be used prior to augmenting ERO maintenance personnel arriving.

The following Repair Team Activities Function Table is provided to illustrate specifics related to the current on-shift and augmentation of Repair Team Activities function.

Repair Team Activities Function Table				
	Current on-shift Maintenance	**Proposed on-shift Maintenance**	**Current Maintenance Augmentation**	**Proposed Maintenance Augmentation**
BNP	2 Mechanical; 3 Electrical/I&C (IAE)	N/A	N/A	1 Mechanical at 75 minutes; 2 IAE at 75 minutes
CNS	1 Mechanical; 2 IAE	N/A	1 Mechanical at 75 minutes; 2 IAE at 75 minutes 1 Rad Waste Operator	1 Mechanical at 75 minutes; 2 IAE at 75 minutes
HNP	1 Mechanical; 1 IAE	N/A	2 Mechanical at 75 minutes; 2 IAE at 45 minutes; 1 IAE at 75 minutes	1 Mechanical at 75 minutes; 2 IAE at 75 minutes
MNS	1 Mechanical; 2 IAE	N/A	1 Mechanical at 75 minutes; 2 IAE at 75 minutes 1 Rad Waste Operator	1 Mechanical at 75 minutes; 2 IAE at 75 minutes
ONS	2 Mechanical; 2 IAE	N/A	1 Mechanical at 75 minutes; 2 IAE at 75 minutes 1 Rad Waste Operator	1 Mechanical at 75 minutes; 2 IAE at 75 minutes
RNP	N/A	N/A	2 Mechanical at 75 minutes; 2 IAE at 45 minutes; 1 IAE at 75 minutes	1 Mechanical at 75 minutes; 2 IAE at 75 minutes

Duke Energy proposed to remove the current on-shift maintenance technicians and align ERO staffing augmentation levels with NUREG-0654 Table B-1 guidance. Duke Energy also proposed to remove the Rad Waste Operator from the CNS, MNS, and ONS site-specific annexes. Duke Energy states that maintenance personnel designated as minimum ERO are used as needed for skill of the craft tasks for repair of ECCS components. As proposed, Duke Energy would provide ERO Repair Team Activities staffing levels that would be consistent with NUREG-0654 Table B-1 guidance with an augmentation time of 75 minutes. Because Duke Energy has a FLEX strategy that would provide the on-shift capability to mitigate a radiological event and Duke Energy will provide ERO augmentation for the Repair Team Activities function within 75 minutes of an Alert or greater ECL, the NRC staff finds the proposed changes to Repair Team Activities acceptable.

Duke Energy proposed to remove a footnote from the Harris site-specific emergency plan that provides maintenance support staffing with the hatch open. This footnote provided additional

maintenance personnel to support securing the containment in response to a fuel handling accident. Because the guidance of NUREG-0654 does not include guidance for fuel handling activities and Duke Energy would continue to provide maintenance personnel to provide electrical and mechanical support for ECCS equipment, event mitigation, and equipment repair, the NRC staff finds the removal of the footnote providing additional maintenance personnel during fuel handling in the containment with the equipment hatch open acceptable.

The NRC staff reviewed the licensee's proposed changes to the Repair Team Activities function and found them acceptable based on the information discussed above. With the proposed changes, the licensee's emergency plan will be consistent with the NUREG-0654 Table B1. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and these changes are acceptable.

Supervision of Repair Team Activities

Duke Energy provided its analysis of the supervision of Repair Team Activities in Section 3.2.10, "Key Function: Supervision of Repair Team Activities," of the LAR Enclosure.

NUREG-0654 Table B-1 recommends a lead OSC Supervisor to staff the OSC within 60 minutes with a mechanical supervisor, a RP supervisor, an electrical supervisor, and an instrument and controls supervisor (who may be combined with the electrical supervisor).

Currently, the Duke Energy site emergency plans identify the OSC Manager as the individual responsible for control of the OSC as minimum staff, with a maintenance supervisor who would respond to the TSC as a non-minimum ERO position. Duke Energy proposed to re-categorize the TSC Maintenance Supervisor position as a minimum ERO staff position. The TSC Maintenance Supervisor would respond within 75 minutes of an Alert or greater ECL. In response to an NRC staff request for addition information dated March 11, 2021, Duke Energy stated that maintenance supervisors within Duke Energy lead multidiscipline teams of Mechanical and Instrument and Electrical personnel. The Duke Energy maintenance supervisor normal and ERO training programs are not discipline specific. Because Duke Energy uses a single maintenance supervisor to lead multi-discipline teams that has proven successful during normal maintenance activities at Duke Energy and this approach is consistent with the current Duke Energy site emergency plans, the NRC staff finds that using a single maintenance supervisor to provide oversight for the Repair Team Activities function is acceptable.

The NRC staff reviewed the licensee's proposed changes to the Supervision of Repair Team Activities Function and found them acceptable based on the information discussed above. The licensee provided adequate justification for proposed changes which differed from NUREG-0654 Table B-1. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and this change is acceptable.

Field Monitoring Teams

The licensee provided its analysis of the Field Monitoring Team (FMT) function in Section 3.2.11, "Key Function: Field Monitoring Teams," of the LAR Enclosure.

NUREG-0654 Table B-1 recommends one onsite FMT and two offsite FMTs as minimum staff. Each FMT would consist of a driver and one qualified individual (i.e., a field monitor) to assess the area for radiation and contamination. The field monitors for the offsite FMTs would also provide radioactive plume tracking. The onsite FMT and one offsite FMT are recommended to

be staffed within 60 minutes, and the second offsite FMT is recommended to be staffed within 90 minutes from the declaration of Alert or higher ECL.

Currently, Duke Energy performs onsite and offsite field monitoring as indicated on the following Field Monitoring Function table. Duke Energy currently performs onsite field monitoring by using a RP qualified individual from an available pool of RP Technicians who would respond within 45 minutes of an Alert or higher ECL for all sites except Brunswick. Currently Brunswick provides an additional on-shift RP Technician who could provide onsite monitoring if needed. Duke Energy currently provides two offsite FMTs for each Duke Energy site who would respond within 75 minutes of an Alert or higher ECL. The offsite FMTs include at least one RP Technician for each offsite FMT.

The following Field Monitoring Function Table is provided to illustrate specifics related to current on-shift and augmentation of Field Monitoring Function.

Field Monitoring Function Table			
	Current on-shift Field Monitoring	**Current 45-minute Field Monitoring Augmentation**	**Current 75-minute Field Monitoring Augmentation**
BNP	1 Onsite		1 Onsite 4 Offsite*
CNS	N/A	1 Onsite	1 Onsite 4 Offsite*
HNP	N/A	1 Onsite 2 Offsite*	1 Onsite 2 Offsite*
MNS	N/A	1 Onsite	1 Onsite 4 Offsite*
ONS	N/A	1 Onsite	1 Onsite 4 Offsite*
RNP	N/A	1 Onsite 2 Offsite*	1 Onsite 2 Offsite*
(*) Duke Energy provides field monitoring teams of two individuals. At least one of these individuals is a RP Technician.			

The proposed DECEP would provide two offsite FMTs with each team consisting of one FMT Technician and one FMT driver. The proposed DECEP would have all offsite FMTs respond within 75 minutes of an Alert or higher ECL. In response to an NRC staff request for additional information, Duke Energy included an Onsite FMT Technician who would be available within 60 minutes of an Alert or higher ECL. Because the proposed DECEP would provide the capability to perform onsite field monitoring within 60 minutes of an Alert or higher ECL, Duke Energy would provide onsite monitoring capability that is consistent with the guidance in NUREG-0654. The proposed DECEP would align all FMT response time with a response time that is currently approved for four Duke Energy sites.

The NRC staff reviewed the licensee's proposed changes to the FMT Function and found them acceptable based on the information discussed above. The licensee provided adequate justification for proposed changes which differed from NUREG-0654 Table B-1. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and these changes are acceptable.

Media Information

The purpose of the media information function is to manage, and coordinate media information related to the event. The licensee provided its analysis of the Media Information Function in Section 3.2.12, "Key Function: Media Information," of the LAR site-specific enclosures.

NUREG-0654 Table B-1 recommends that Joint Information System (JIS)/Joint Information Center (JIC) staff address media inquiries within 60 minutes of the declaration of an Alert or higher ECL but notes that this function does not need to be performed at the TSC or OSC. NUREG-0654 Table B-1 further recommends additional staff to perform JIC functions within 60 minutes of the declaration of a Site Area Emergency or General Emergency ECL. For the JIC/JIS, NUREG-0654 Table B-1 notes: "Emergency response facility (ERF) activation timing is not the concern; it is whether the facility staff is performing the stated function(s) within the time specified." NUREG-0654 does not specify an on-shift capability and does not identify specific staff positions for the minimum staff for the JIC/JIS.

Duke Energy Corporate Communications personnel currently support Duke Energy facilities at all times. Duke Energy Corporate Communications personnel coordinate with Duke Energy management and respective emergency response facilities to respond to media inquiries and issue press releases as appropriate. Although all Duke Energy sites currently provide ERO staffing for the JIC function, only RNP provides minimum ERO staff positions. Duke Energy does not currently identify an ERO response time for staffing the JIC at any Duke Energy site.

The proposed DECEP would include a JIS that would provide a structured approach to organizing, integrating, and delivering coordinated interagency messages via established plans, procedures, and strategies. Duke Energy would provide JIS support for all emergency classification levels. Duke Energy proposed to remove the current JIC positions from the proposed DECEP and site-specific annexes, add one Public Information Officer and one Public Information Liaison as ERO minimum staff positions. The Public Information Officer would respond within 75 minutes of an Alert or higher ECL to address media inquiries. Additionally, the proposed DECEP would have a Public Information Liaison respond to the EOF within 75 minutes of a Site Area Emergency. For RNP, the proposed change would retitle the Technical Liaison to the Public Information Liaison. Because Duke Energy would continue to provide Corporate Communications personnel that would perform necessary JIS functions for Unusual Event or higher ECLs and would add the Media Information function and associated ERO augmenting responders to the proposed DECEP, the NRC staff finds the proposed changes to the Media Information acceptable.

The NRC staff reviewed the licensee's proposed changes to the Media Information function and found them acceptable based on the information discussed above. The licensee provided adequate justification for proposed changes which differed from NUREG-0654 Table B-1. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and these changes are acceptable.

Information Technology

The purpose of the Information Technology (IT) function is to provide support for computer-based equipment if relied upon to perform emergency plan functions. Duke Energy

provided its analysis of the IT function in Section 3.2.13, “Key Function: Information Technology,” of the LAR site-specific enclosures.

NUREG-0654 Table B-1 states that IT staffing is only required to be described in the emergency plan if critical digital assets are identified per 10 CFR 73.54, “Protection of digital computer and communications systems and networks.”

Duke Energy states that minimum staff IT support is not needed based on acceptable performance of digital equipment during drills and exercises and built-in redundancy of communication systems and digital emergency plan assets. Duke Energy states that the EOF and TSC contain multiple computers and programs in the facility, which are used during training and are periodically tested. If issues are identified during testing, they are promptly addressed through either the Corrective Action Program or the EP Drill and Exercise Process. Additionally, Duke Energy maintains an IT Help Desk that is available on a 24/7 basis. Because of built-in redundancy for IT assets and an IT Help Desk, the NRC staff finds the proposed support for the IT function acceptable. The Emergency Response Data System (ERDS) activation is performed by the NRC communicator.

Because of the demonstrated reliability and redundancy of Duke Energy digital EP assets and a designated individual to activate ERDS, the NRC staff finds the proposed changes to the IT function acceptable. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and these changes are acceptable.

Radiological Assessment (Chemistry/Radiochemistry Task)

The Chemistry/Radiochemistry task was included under the Radiological Assessment function in the previous revision of NUREG-0654 (hereafter referred to as NUREG-0654, Revision 1) but is not included in NUREG-0654, Revision 2. Duke Energy provided its analysis of the Chemistry/Radiochemistry task in Section 3.2.14, “Key Function: Radiological Assessment (Chemistry/Radiochemistry Task),” of the LAR site-specific enclosures.

The proposed DECEP would remove the Chemistry/Radiochemistry task, and chemistry technicians from the proposed DECEP and site-specific annexes. Duke Energy states that no emergency plan implementation tasks were assigned to the Chemistry positions.

Because the Chemistry positions are not included in NUREG-0654, Revision 2, and the Duke Energy Chemistry positions are not assigned emergency plan implementation functions, the NRC staff finds the proposed changes to the Chemistry/Radiochemistry Task acceptable. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and these changes are acceptable.

Firefighting/Rescue Operations and First Aid

The Firefighting/Rescue Operations and First Aid functions were included in NUREG-0654, Revision 1, but are not included in NUREG-0654, Revision 2. Duke Energy provided its analysis of the Firefighting/Rescue Operations and First Aid functions in Section 3.2.15, “Key Function: Firefighting/Rescue Operations and First Aid,” of the LAR site-specific enclosures.

NUREG-0654 Table B-1 states that the operations staff, security force staff or fire brigade staff on-shift is controlled by the site-specific Technical Specifications or other licensing documents. The proposed DECEP would remove the Firefighting/Rescue Operations and First Aid

Functions from the proposed DECEP and site-specific annexes. Duke Energy will continue to maintain qualified fire brigade, rescue, and first aid personnel on-shift controlled by applicable programs.

Because Duke Energy would continue to provide firefighting, rescue operations, and first aid in accordance with applicable programs and its proposal is consistent with NUREG-0654 guidance, the NRC staff finds the proposed removal of the Firefighting/Rescue Operations and First Aid functions acceptable. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and these changes are acceptable.

Plant Operations and Assessment of Operational Aspects

The Plant Operations and Assessment of Operational Aspects Function was included in NUREG-0654, Revision 1, but is not included in NUREG-0654, Revision 2. NUREG-0654, Table B-1 states that the operations staff, security force staff, and fire brigade staff is controlled by the site-specific Technical Specifications or other licensing documents.

Duke Energy proposed to remove the Plant Operations and Assessment of Operational Aspects Function and associated operators from the proposed DECEP and site-specific annexes.

Because Duke Energy would continue to provide operations staffing controlled by site-specific Technical Specifications or other licensing documents, and its proposal is consistent with NUREG-0654 guidance, the NRC staff finds the proposed removal of the Plant Operations and Assessment of Operational Aspects acceptable. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and these changes are acceptable.

Non-Minimum Augmenting ERO

NUREG-0654, Table B-1, Note 334 states:

> The minimum ERO staffing plan is that which is required to effectively implement the site-specific emergency plan (i.e., the emergency plan cannot be effectively implemented without this staff). The emergency plan should describe the minimum ERO staffing plan, while supporting implementing procedures can describe any other staff response desired by the licensee as long as this staff is not critical to effective emergency plan implementation. The augmentation times listed are intended to provide a model for applicants and licensees to consider in the development of their site-specific emergency plan.

The current Duke Energy Emergency Plans contain trained and qualified non-minimum ERO positions that provide support for a radiological emergency. Duke Energy stated that the presence of non-minimum ERO positions is not required to activate the respective emergency response facilities. In the supplement dated May 4, 2021, Duke Energy stated that subsequent to the submission of this LAR, Duke Energy removed the Operator Aid Computer Support, Chemistry Supervisor, and Generation Supply Chain Liaison positions from the current Duke Energy site Emergency Plans. Duke Energy also removed the Administration Support and Registration Liaison positions from the applicable current Duke Energy Emergency Plans under 10 CFR 50.54(q). Because the licensee has removed these positions from the current Duke Energy Emergency Plans, this safety evaluation does not include those positions as they are no longer in the current Duke Energy Emergency Plans.

Duke Energy provided an on-shift and augmenting ERO task disposition and assessment for positions removed from the current Duke Energy Emergency Plans. This assessment included the assigned tasks, task dispositions, and a justification supporting elimination of the positions that were proposed to be removed from the current Duke Energy Emergency Plans and retained in Duke Energy EPIPs.

The following table is provided to illustrate specifics related to positions moved from the Duke Energy Emergency Plans to Duke Energy EPIPs:

Duke Energy ERO Positions Moved from Emergency Plans to EPIPs	
TSC	**EOF**
Assistant Emergency Coordinator (all sites)	Accident Assessment Manager (all sites)
Main Control Room Operations Bridge (all)	Assistant EOF Director (all)
Assistant Operations Manager (all)	Dose Assessor (all)
Engineering Manager (all)	FMT Coordinator 1 (all)
Site Evacuation Coordinator (all)	FMT Coordinator 2 (all)
Incident Command Post Liaison 1 (all)	Accident Assessment Interface (all)
Incident Command Post Liaison 2 (BNP)	Services Manager (all)
Log Keeper (all)	Services Administration Commissary (all)
	Emergency Planner (all)
	State & County EOC Liaison 1 (all)
OSC	State & County EOC Liaison 2 (all)
Assistant OSC Manager (all)	State & County EOC Liaison 3 (all)
Operations Supervisor (all)	State & County EOC Liaison 4 (CNS, HNP, MNS, RNP)
Operations Liaison (all)	State & County EOC Liaison 5 (CNS, HNP, MNS)
Log Keeper (all)	Log Keeper (all)
	Data Coordinator (all)
	Offsite Communicator (all)

The interfaces between and among the onsite functional areas of emergency activity and local services support, and State and county government response organizations are represented in a figure in Section B.4 of the proposed DECEP. Contractor and private organizations are also referenced in the proposed DECEP and site-specific annexes. Local emergency support organizations are included in the proposed DECEP and site-specific annexes by the type of assistance provided.

Based on a review of the site-specific on-shift ERO task disposition and assessment for positions removed from the Duke Energy Emergency Plans and the above evaluations for each EP Function, the NRC staff determined that the proposed DECEP ERO will continue to provide the capability to perform EP Functions listed in NUREG-0654, Table B-1. Therefore, NUREG-0654 Evaluation Criterion B.1.a continues to be met and these changes are acceptable.

3.2.2.4 Criterion II.B Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy has defined on-shift responsibilities, provides adequate staffing to maintain initial accident response in key functional areas at all times, includes timely augmentation of response capabilities, and specifies the

interfaces among various onsite and offsite response activities and support. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(2) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.3 Criterion II.C, “Emergency Response Support and Resources”

NUREG-0654, Evaluation Criterion II.C, addresses the planning standard 10 CFR 50.47(b)(3), which states:

> Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee's Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified.

Section IV.A.7 of Appendix E to 10 CFR Part 50 requires the identification of, and a description of the assistance expected from, appropriate Federal, State, and local agencies with responsibilities for coping with emergencies, including hostile action at the site.

The requirements of 10 CFR 50.47(b)(3) and applicable requirements of Section IV.A.7 of Appendix E to 10 CFR Part 50 are addressed in portions of Section C, “Emergency Response Support and Resources,” of the proposed DECEP.

3.2.3.1 Common Emergency Plan

The Duke Energy EOF, which is located in Charlotte, North Carolina (NC), is capable of accommodating designated Duke Energy ERO personnel, and Federal, State, and local responders, including NRC response teams and Federal Emergency Management Agency (FEMA) personnel. The EOF contains dedicated work areas and resources for Federal and State response personnel and provides access to plant data and radiological information.

Once an emergency has been declared, the Shift Manager has the authority and responsibility to request aid from OROs, Federal, State and county organizations, or private organizations until relieved by the EOF Director. The proposed DECEP specifically discusses Shift Manager and Emergency Director staffing and responsibilities.

The proposed DECEP states that the Security organization controls site access at all times in accordance with the Security Plan. The TSC Security Coordinator is identified as being responsible to coordinate with on-shift personnel when site access is needed for non-badged offsite agency and support personnel.

The proposed DECEP states that agreements with State and county response organizations have been established though the integrated development of their respective emergency plans and that agreements with other entities have been formally developed and documented through MOUs, contracts, and/or LOAs.

The proposed DECEP states that, in addition to coordination between individuals in Command and Control of each organization, Duke Energy personnel liaisons are typically dispatched to State or county emergency operation centers.

Duke Energy has a laboratory/counting room at each site that can provide analysis of samples from process systems and perform environmental monitoring sample analysis. Additional

facilities for counting and analyzing samples are available at unaffected Duke Energy nuclear sites or State and Federal laboratory services. Offsite laboratory facilities are available from the NC Department of Environmental Health and Natural Resources, Division of Radiation Protection; State of South Carolina (SC) Department of Health and Environmental Services, and the U.S. Department of Energy Radiological Assistance Team.

The Duke Energy sites' ERDS is continuously online. The proposed DECEP states that Duke Energy personnel will verify ERDS operation within one hour of the declaration of an Alert or higher ECL.

The proposed DECEP states that the ERO is staffed to provide the capability of maintaining continuous communications with the NRC with knowledgeable personnel.

3.2.3.2 Emergency Plan Annexes

A complete description of Duke Energy's emergency response support and resource Evaluation Criterion is provided in the proposed DECEP and is not addressed in the site-specific annexes.

3.2.3.3 Proposed Changes to Site-Specific Emergency Plans

The licensee stated that there are no proposed changes to the facilities' site-specific emergency plans that involve a reduction in effectiveness under this Evaluation Criterion.

3.2.3.4 Criterion II.C Evaluation Conclusion

Based on the above, the NRC staff concludes that the proposed DECEP would continue to identify the arrangements for requesting and effectively using assistance resources, provide arrangements to accommodate State and local staff at the licensee's EOF, and identify other organizations capable of augmenting the planned response. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(3) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.4 Criterion II.D, "Emergency Classification System"

NUREG-0654, Evaluation Criterion II.D, addresses planning standard 10 CFR 50.47(b)(4), which states:

> A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

Section IV.B.1 of Appendix E to 10 CFR Part 50 requires that the means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of county and State agencies, the Commission, and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety.

Section IV.C.2 of Appendix E to 10 CFR Part 50 requires that power reactor licensees shall establish and maintain the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and shall promptly declare the emergency condition as soon as possible following identification of the appropriate ECL.

The requirements of 10 CFR 50.47(b)(4) and applicable requirements of Sections IV.B.1 and C.2 of Appendix E to 10 CFR Part 50, are addressed in Section D, "Emergency Classification System," of the proposed DECEP and site-specific annexes.

3.2.4.1 Common Emergency Plan

The proposed DECEP provides an overall discussion regarding classification of emergencies and the basis for emergency classification. The emergency action levels (EALs) for each site were developed in accordance with the Nuclear Energy Institute (NEI) document, NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," November 2012, which was endorsed by the NRC in a letter dated March 28, 2013, as acceptable generic EAL scheme development guidance (References 8 and 9). The EALs for each respective site are documented in an EAL Technical Basis Document that is specific to each site. The EAL scheme for each site was agreed upon by State and county governmental authorities and is reviewed by State and county government authorities on an annual basis.

The proposed DECEP states that Duke Energy has and maintains the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an EAL threshold has been met or exceeded.

3.2.4.2 Emergency Plan Annexes

The site-specific annexes identify the EAL scheme document for each site.

3.2.4.3 Proposed Changes to Site-Specific Emergency Plans

The licensee stated that there are no proposed changes to the facilities' site-specific emergency plans that involve a reduction in effectiveness under this Evaluation Criterion.

3.2.4.4 Criterion II.D Evaluation Conclusion

Based on the above, the NRC staff concludes that the proposed DECEP would continue to identify a standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(4) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.5 Criterion II.E, "Notification Methods and Procedures"

NUREG-0654, Evaluation Criterion II.E, addresses planning standard 10 CFR 50.47(b)(5), which states:

> Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and follow-up messages to response

organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

Section IV.D.1 of Appendix E to 10 CFR Part 50, requires administrative and physical means for notifying local, State, and Federal officials and agencies, and that agreements reached with these officials and agencies for the prompt notification of the public and for public evacuation or other protective measures, should they become necessary, shall be described.

Section IV.D.3 of Appendix E to 10 CFR Part 50 requires that a licensee shall have the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency.

Section IV.D.3 further requires that the design objective of the prompt public alert and notification system shall be to have the capability to essentially complete the initial alerting and initiate notification of the public within the plume exposure pathway EPZ within about 15 minutes.

The requirements of 10 CFR 50.47(b)(5) and applicable requirements of Section IV.D of Appendix E to 10 CFR Part 50, are addressed in Section E, “Notification Methods and Procedures,” of the proposed DECEP and site-specific annexes.

3.2.5.1 Common Emergency Plan

The proposed DECEP describes the notification methods and procedures to ensure prompt notification to State and local response organizations and all appropriate emergency personnel. Duke Energy, in coordination with State and county authorities, has developed methods and procedures for notification of offsite response organizations consistent with the emergency classification and EAL scheme at each site. When an emergency is declared or upgraded, or changes are made to shelter and/or evacuation PARs, a notification will be made within 15 minutes. Initial and follow-up notification message content are mutually developed and agreed upon by Duke Energy and the State and county authorities. Notification forms, methods, and the message authentication techniques for each of the Duke Energy sites are provided in emergency procedures.

The primary State and county notification method is by a dedicated communications system. The backup method for notification is via commercial telephone lines. The initial notification to the NRC is made using the Emergency Notification System (ENS) as soon as possible after the initial notification to the States and counties, and not longer than 60 minutes of event declaration. If the ENS is inoperative, the required notification will be made using a backup means, such as an alternate commercial line, mobile, or satellite phone.

Duke Energy nuclear sites utilize an alert and notification system (ANS) siren system that is activated by the counties as the primary general public notification system for Duke Energy. The ANS is designed to provide an alerting signal to the population on an area-wide basis throughout the 10-mile EPZ. The States and counties, after transmission of the alert signal, provide an information or instructional message to the population via various methods as approved by the FEMA.

As a backup alert notification method, State and county plans maintain the alert mechanism via emergency vehicles with Public Address (PA) systems and automated dialing systems (using

reverse 911 calls to alert and notify essentially 100% of the population to monitor commercial broadcasts for emergency information). The ANS is available and operational in the 10-mile EPZ around each of the six Duke Energy nuclear sites. The ANS provides an alerting signal to approximately 100% of the population on an area-wide basis throughout the 10-mile EPZ within 15 minutes from the time the affected offsite agencies have determined the need for alerting exists.

Alerting, warning, and notification of the public are actions taken by government agencies to provide prompt instructions to the public. As such, government agencies will take actions for areas in the EPZ not covered by ANS; such as waterways, unpopulated wooded areas, military installations, and the like; as described in State and county government emergency operating plans, guidelines, and procedures.

In conjunction with State and county authorities, Duke Energy nuclear sites have established the content of the initial notification message, as well as the follow-up notification message to be used during an emergency.

3.2.5.2 Emergency Plan Annexes

The site-specific annexes identify the site-specific activation methods and the FEMA design report for each site. Additionally, the HNP Emergency Plan Annex provides further site-specific information describing how its alerting, warning, and notification will be provided by sounding sirens, activation of tone-activated radios within 5 miles of the plant, supplemented by announcements made through radio and television, sound trucks, bullhorns, and knocking on doors. The tone alert radios provide an indoor alerting signal within a 5-mile radius of the plant. It further states that activation of the tone alert radios is by the National Weather Service and will be accomplished after a request is received from Wake County or the State of NC.

3.2.5.3 Proposed Changes to Site-Specific Emergency Plans

The licensee stated that there are no proposed changes to the facilities' site-specific emergency plans that involve a reduction in effectiveness under this Evaluation Criterion.

3.2.5.4 Criterion II.E Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy has established provisions for notification of State and local response organizations and of licensee emergency personnel, the content of initial and follow-up messages to response organizations, and means to provide early notification and clear instruction to the populace within the plume exposure pathway EPZ at each site. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(5) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.6 Criterion II.F, "Emergency Communications"

NUREG-0654, Evaluation Criterion II.F, addresses planning standard 10 CFR 50.47(b)(6) which states:

> Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.

Section IV.E of Appendix E to 10 CFR Part 50 requires that a licensee describe provisions for prompt communications among principal response organizations to emergency personnel and to the public.

Section IV.E.9.a of Appendix E to 10 CFR Part 50 requires provision for communications with contiguous State/local governments within the plume exposure pathway EPZ. Such communications shall be tested monthly.

Section IV.E.9.d of Appendix E to 10 CFR Part 50 requires provisions for communications by the licensee with NRC Headquarters and the appropriate NRC Regional Office Operations Center from the nuclear power reactor control room, the onsite technical support center, and the Emergency Operations Facility. Such communications shall be tested monthly.

The requirements of 10 CFR 50.47(b)(6) and applicable requirements of Section IV.E of Appendix E to 10 CFR Part 50 are addressed in Section F, "Emergency Communications," of the proposed DECEP.

3.2.6.1 Common Emergency Plan

The proposed DECEP states that several modes of reliable communication are available, during both normal and emergency conditions, to transmit and receive information among the control room, TSC, OSC, EOF, and other locations onsite and offsite at the Duke Energy facilities. Reliable primary and backup means of communication have been established and are detailed in the proposed DECEP. Duke Energy maintains the capability to make initial notifications to the designated offsite agencies through the Duke Energy Emergency Management Network which consists of equipment and circuits linking Duke Energy nuclear sites with the offsite agencies involved in initial emergency notifications. This system can quickly conference the offsite agencies for notifications. All Duke Energy control rooms and the EOF have this system.

Communication with the NRC is on a Private Branch Exchange (PBX), which connects each Duke Energy nuclear site's control room and TSC, and the EOF, with the NRC Operations Center. Telephones are designated for the following NRC communications:

- NRC ENS,
- NRC Health Physics Network,
- NRC Reactor Safety Counterpart Link,
- Protective Measures Counterpart Link, and
- Management Counterpart Link.

The PBX is also the primary means of communications to local medical facilities (as identified in the site-specific annexes to the proposed DECEP).

Duke Energy nuclear sites use the Plant PA System to alert and notify onsite personnel of an emergency condition within 15 minutes. Duke Energy nuclear sites use an automated ERO Notification System to rapidly notify members of the ERO during a declared emergency; the ERO Notification System consists of offsite primary and backup computer systems. The systems are capable of autodialing and communicating a message on ERO member phones and by text.

The proposed DECEP states, in part, that systems used to communicate with State and county governments within the plume exposure pathway EPZ will be tested monthly. Systems used to communicate from the control room, TSC, and EOF to NRC Headquarters and NRC Regional Office Operations Center will be tested monthly. The communications with State and county government EOCs will be tested annually along with the systems used to communicate with Duke Energy ERFs, and from the applicable ERF to the field assessment teams. The proposed DECEP also states that each of the systems utilized to communicate with Federal EROs will be tested annually, and ERDS will be verified to be connected and transmitting data on a quarterly basis. Finally, ANS testing will be performed on the following intervals: Silent Tests are performed every (2) weeks, Growl Tests are performed quarterly, and Full Cycle Tests are performed annually.

3.2.6.2 Emergency Plan Annexes

A complete description of Duke Energy's Emergency Communications is provided in the proposed DECEP and is not addressed in the site-specific annexes, except for the BNP and HNP Emergency Plan Annexes.

BNP Emergency Plan Annex

Section F, "Emergency Communications," of the BNP Emergency Plan Annex states that provisions exist for continuous communications with the U.S. Coast Guard and provides a list of methods that are available for use.

HNP Emergency Plan Annex

Section F of the HNP Emergency Plan Annex describes the distribution, maintenance, testing methods and periodicity for the tone alert radios.

3.2.6.3 Proposed Changes to Site-Specific Emergency Plans

Duke Energy identified three (3) specific changes to site-specific emergency plans that involve a reduction in effectiveness related to this Evaluation Criterion, that have been proposed for each of the site-specific annexes identified below.

Modify State/Federal communication testing

CNS

Duke Energy states that the current CNS Emergency Plan specifies testing of the systems used for communication between CNS and the State(s) within the ingestion exposure pathway EPZ (50-mile radius) is completed with the monthly test to applicable State(s). This met the communications drill requirement in NUREG-0654, Revision 1, Evaluation Criterion N.2.a regarding testing communications with State(s) within the ingestion exposure pathway EPZ quarterly. The proposed DECEP does not require a communication test between the plant and States within the ingestion exposure pathway EPZ. Duke Energy states that because there are no EP functions that require contact from the licensee to entities within the ingestion exposure pathway EPZ, it is not necessary for the licensee to test communication with those entities; the DECEP therefore omits this provision.

Duke Energy states that the current CNS Emergency Plan specifies that quarterly testing of the systems used for communication between the site and Federal emergency response organizations is completed with the monthly test of communications with the NRC. This meets the NUREG-0654, Revision 1, Evaluation Criterion N.2.a requirement of testing communications with Federal emergency response organizations quarterly. Consistent with 10 CFR Part 50 Appendix E Section IV.E.9.b, the proposed DECEP specifies an annual periodicity for this test. The communication requirements in NUREG-0654 Evaluation Criterion N.4.f specify that Federal communications are to be tested but does not provide a frequency. Duke Energy states that this proposed change does not impact testing of communications with the NRC Headquarters and Regional Office Operations Centers, as described in the proposed DECEP, which will continue to be tested monthly as required by 10 CFR Part 50 Appendix E Section IV.E.9.d; therefore, the staff finds that the proposed change continues to meet NRC regulations and ensures that appropriate testing of communications is available to support EP functions.

HNP

Duke Energy states that the current HNP Emergency Plan specifies that testing of the systems used for communication between HNP and the State emergency operations center (EOC) be completed monthly. This meets the communications drill requirement in NUREG-0654, Revision 1, Evaluation Criterion N.2.a regarding testing communications with State EOCs at least annually. Consistent with 10 CFR Part 50 Appendix E Section IV.E.9.c, the proposed DECEP specifies an annual periodicity for this test. The communication requirements in NUREG-0654 Evaluation Criterion N.4.f specify that State communications are to be tested but does not provide a frequency. Duke Energy states that this change does not impact testing of communications with the State and local warning points, as described in the proposed DECEP, which will continue to be tested monthly as required by 10 CFR Part 50 Appendix E Section IV.E.9.a; therefore, the staff finds that the proposed change continues to meet regulations and ensures that appropriate testing of communications is available to support EP functions.

MNS

Duke Energy states that the current MNS Emergency Plan specifies that testing of the systems used for communication between MNS and the States within the ingestion pathway EPZ (50-mile radius) is completed with the monthly test to NC, with an additional test to SC that is completed quarterly. This met the communications drill requirement in NUREG-0654, Revision 1, Evaluation Criterion N.2.a regarding testing communications with State(s) within the ingestion exposure pathway EPZ quarterly. The proposed DECEP does not require a communication test between the plant and State(s) within the ingestion exposure pathway EPZ. Duke Energy states that because there are no EP functions that require contact from the licensee to entities within the ingestion exposure pathway EPZ, and it is therefore not necessary for the licensee to test communication with those entities.

Duke Energy states that the current MNS Emergency Plan specifies that quarterly testing of the systems used for communication between those sites and Federal emergency response organizations is completed with the monthly test with the NRC. This met the NUREG-0654, Revision 1, Evaluation Criterion N.2.a requirement of testing communications with Federal emergency response organizations quarterly. Consistent with 10 CFR Part 50 Appendix E Section IV.E.9.b, the proposed DECEP specifies an annual periodicity for this test. The communication requirements in NUREG-0654 Evaluation Criterion N.4.f specify that Federal communications are to be tested but does not provide a frequency. Duke Energy states that this proposed change does not impact testing of communications with the NRC Headquarters

and Regional Office Operations Centers, as described in the proposed DECEP, which will continue to be tested monthly as required by 10 CFR Part 50 Appendix E Section IV.E.9.d; therefore, the staff finds that the proposed change continues to meet regulations and ensures appropriate testing of communications are available to support EP functions.

BNP, ONS, and RNP

Duke Energy states that the current BNP, ONS, and RNP Emergency Plans specify testing of the systems used for communication between sites and the State(s) within the ingestion exposure pathway EPZ (50-mile radius) is completed with the quarterly test to applicable State(s). This meets the communications drill requirement in NUREG-0654, Revision 1, Evaluation Criterion N.2.a regarding testing communications with State(s) within the ingestion exposure pathway quarterly. The proposed DECEP does not require a communication test between the plant and State(s) within the ingestion exposure pathway EPZ. Duke Energy states that because there are no EP functions that require contact from the licensee to entities within the ingestion exposure pathway EPZ, it is not necessary for the licensee to test communication with those entities.

Duke Energy states that the current BNP, ONS, and RNP Emergency Plans specify quarterly testing of the systems used for communication between the sites and Federal emergency response organizations. This meets the NUREG-0654, Revision 1, Evaluation Criterion N.2.a requirement of testing communications with Federal emergency response organizations quarterly. Consistent with 10 CFR Part 50 Appendix E Section IV.E.9.b, the proposed DECEP specifies an annual periodicity for this test. The communication requirements in NUREG-0654 Evaluation Criterion N.4.f specify that Federal communications are to be tested but does not provide a frequency. This change does not impact testing of communications with the NRC Headquarters and Regional Office Operations Center described in the proposed DECEP, which will continue to be tested monthly as required by 10 CFR Part 50 Appendix E Section IV.E.9.d; therefore, this does not impact communication systems required for prompt notification of emergency conditions.

The NRC staff agrees that the changes to the communications testing frequencies as described above continue to meet regulations of 10 CFR Part 50 Appendix E Section IV.E.9.a and d and ensure that appropriate testing of communications is available to support EP functions. Therefore, NUREG-0654 Evaluation Criterion F.3 continues to be met and these changes are acceptable.

Replace FMT radios with cell phones

CNS, MNS, and ONS

NUREG-0654 Evaluation Criterion F.1.b requires that communication with applicable organizations within the EPZ exist and a description of the methods used to contact each organization exists. Each of the site-specific annexes for these sites have proposed to replace the use of FMT radios to accomplish this task with cell phones due to technology advances and to be consistent with the other fleet facilities.

The NRC staff confirmed that Duke Energy obtains cell phone service through Verizon which Duke Energy states that it provides service coverage that encompasses all areas in which the FMTs may travel within the 10-mile EPZ for each of these sites. Therefore, NUREG-0654 Evaluation Criterion F.1.b continues to be met and this change is acceptable.

Discontinued monthly phone check to National Weather Service (NWS)

CNS and MNS

NUREG-0654 Evaluation Criterion F.3 requires the testing method and periodicity for each communication system used for the functions identified in Evaluation Criteria E.2, F.1, and F.2 be described. For the CNS and MNS facilities, Duke Energy is proposing to discontinue the monthly phone check to the National Weather Service (NWS) in order to align with the other Duke Energy sites, recognizing that the NWS is used by the Duke Energy sites as a means to obtain weather forecasts when primary and backup methods are not available.

Duke Energy states that the monthly test was included in previous versions of the CNS and MNS Emergency Plans to "ensure accessibility" at a time when technology limited data availability by phone only. The NWS phone number being tested is a public access number and no agreement for support services exists between Duke Energy and the NWS. Additionally, the NWS is not a Federal, State, or local emergency response organization requiring tests of communications between entities. Meteorological data needed from the NWS may continue to be obtained from the NWS website. Duke Energy states that this change meets the requirements of NUREG-0654 Evaluation Criterion N.4.f for Communication Drills, which does not require tests of communications with entities that are not emergency response organizations.

The NRC staff agrees that the NWS is not an emergency response organization that would require testing of communications. Therefore, NUREG-0654 Evaluation Criterion F.3 continues to be met and this change is acceptable.

3.2.6.4 Criterion II.F Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy has established provisions for prompt communications among principal response organizations to emergency personnel and to the public. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(6) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.7 Criterion II.G, "Public Education and Information"

NUREG-0654, Evaluation Criterion II.G, addresses planning standard 10 CFR 50.47(b)(7) which states:

> Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.

Section IV.D.2 of Appendix E to 10 CFR Part 50 requires a description of provisions for yearly dissemination to the public within the plume exposure pathway EPZ of basic emergency planning information, such as the methods and times required for public notification and the

protective actions planned if an accident occurs, general information as to the nature and effects of radiation, and a listing of local broadcast stations that will be used for dissemination of information during an emergency. Signs or other measures shall also be used to disseminate to any transient population within the plume exposure pathway EPZ appropriate information that would be helpful if an accident occurs.

The requirements of 10 CFR 50.47(b)(7) and applicable requirements of Section IV.D.2 of Appendix E to 10 CFR Part 50 are addressed in Section G, "Public Education and Information," of the proposed DECEP and site-specific annexes.

3.2.7.1 Common Emergency Plan

The proposed DECEP states that Duke Energy, in coordination with State and county emergency response personnel, updates and distributes site related emergency planning information annually to residents living within the plume exposure pathway EPZ. The information contains educational information on emergency preparedness, sheltering, sirens and radiation, and includes telephone numbers of agencies to contact for more information. In addition, qualified personnel are available to address civic, religious, social, and occupational organizations, and news material is also distributed to the media. Information is offered each calendar year to acquaint news media outlets with the overall EP at Duke Energy sites and the methods for obtaining information during an emergency. The material includes information about the site, radiation effects, emergency response activities, points of contact, etc.

This public education and information program is intended to ensure that members of the public (including those with special needs and non-English speakers) are aware of the potential for a radiological emergency and how to recognize emergency notifications, and are knowledgeable of the proper actions to take upon notification. Information is also provided to the transient population, with transient locations including, but not limited to, motels, hotels, marinas, and lake access areas. The information for event notification includes sirens and the primary radio and television instructions. The information for event response actions includes protective actions, evacuation routes, pick-up points for school children, and reception center locations. Additionally, educational information on radiation and emergency planning contact numbers to call with questions are included.

Duke Energy maintains a JIS concept to provide the necessary structure and mechanism for organizing, developing, integrating, and delivering coordinated interagency messages via established plans, procedures, and strategies. Critical supporting elements of the JIS include the plans, protocols, procedures, and structures used to provide public information. Duke Energy also maintains a JIC in the Duke Energy corporate headquarters in Charlotte, NC, which facilitates operation of the JIS, and where personnel perform critical emergency information functions, crisis communications, and public affairs functions.

NUREG-0654, Revision 2 specifies that the JIS is activated within 60 minutes of a Site Area Emergency of higher ECL. Duke Energy proposes to have the JIS activated within 75 minutes of an Alert or higher ECL to coordinate agencies and provide public information to the media and the public. The coordination and sharing of news releases occurs via the JIS, or within the JIC when activated, and news conference/media briefings are conducted to keep the media informed of events and activities related to the emergency.

When the EOF is not activated, the normal Duke Energy media interaction and news release process is followed. When the EOF is activated, JIS event response procedures are

implemented for gathering and disseminating information. For scheduled news conferences and media briefings, a company spokesperson will provide plant and event status and company information. Arrangements are made for the timely exchange of information among the designated spokespersons that use various means and technologies, and a coordinated response will be made to address rumors or correct misinformation.

3.2.7.2 Emergency Plan Annexes

A complete description of Duke Energy's public education and information program is provided in the proposed DECEP and is not addressed in the site-specific annexes, except for the HNP Emergency Plan Annex.

HNP

The HNP Emergency Plan Annex states that, in addition to the public information distribution described in the proposed DECEP, HNP will also provide an annual distribution of a school brochure to school bus drivers and students, and a periodic (at least annually) publication of information for 10-mile EPZ residents. Lake warning signs are posted at boat ramps, or access roads to boat ramps, at Harris and Jordan Lakes. These signs describe the activities which would be taken to initiate an evacuation of the lake and actions which should be taken in response to the evacuation. The posting of these signs is verified semiannually.

3.2.7.3 Proposed Changes to Site-Specific Emergency Plans

Duke Energy identified two (2) specific changes to site-specific emergency plans that involve a reduction in effectiveness related to this Evaluation Criterion, that have been proposed for each of the site-specific annexes identified below.

Implement Joint Information System concept

BNP, CNS, HNP, MNS, ONS, and RNP

For each of the six Duke Energy sites, the LAR describes a near-site JIC located near each site and a Corporate JIC and media center at the Energy Center in Charlotte, NC. The near-site JIC meets the NUREG-0654, Revision 1, Evaluation Criteria G.3.a and 3.b requirement for providing space for news media at the "near-site EOF." The proposed DECEP implements the concept of a JIS where the Media Information function is supported remotely and removes references to the near-site JIC at each site. The proposed DECEP maintains the Corporate JIC location in Charlotte, NC, to meet the NUREG-0654 Evaluation Criteria G.2 and H.5 requirement of having a JIC established and location identified to interact with the media.

NUREG-0654, Revision 2 specifies that the JIS is activated within 60 minutes of a Site Area Emergency of higher ECL. The NUREG-0654 Media Information function is supported at all times through the Duke Energy Communications Department. The Communications Department responds to media and public inquiries for abnormal conditions and events at any declared ECL, with required activation within 75 minutes of an Alert or higher ECL. The Communications Department coordinates with Duke Energy Management and ERO personnel, when staffed, to respond to media inquiries. Press releases are issued as appropriate from the Communications Department.

In the proposed DECEP, the JIC provides a structure and system for developing and delivering coordinated interagency messages, developing, recommending, and executing public information plans/procedures and strategies; advising the ERO concerning public affairs issues that could affect a response effort; and controlling rumors and inaccurate information that could undermine public confidence in the emergency response effort. Modern technology (email, text, instant message, video conference, etc.) allows coordination of the Media Information function remotely. Although not required to activate, when needed (e.g., intense media attention/interest, ORO request, etc.), Duke Energy will provide a fully equipped JIC with space to interact with the media, located in the Duke Energy corporate headquarters in Charlotte, NC, which is available for joint use by Federal, State, and county agencies. When activated, the JIC is staffed with Communications Department and other corporate or site personnel.

Duke Energy states that removing the requirement to provide an additional near-site JIC, while operating within a JIS, allows Corporate Communications personnel more flexibility to implement response activities (e.g., relocating personnel to an ORO JIC), while continuing to meet the Media Information function. If the decision to staff a JIC is made, providing a single location centralizes Media Information response activities, focuses personnel, and creates consistency with the supporting Media Information function. The JIC/JIS response is demonstrated and evaluated in drills and exercises. Duke Energy concluded by stating that this change aligns the proposed DECEP to the guidance in NUREG-0654 for coordinating information with the media and having a JIC location identified.

The NRC staff evaluated the adequacy of Duke Energy's proposed public education and information system by considering the applicable guidance in NUREG-0654 and NUREG-0696 supporting the requirements in 10 CFR 50.47(b)(7) and Section IV.D.2 of Appendix E to 10 CFR Part 50. The JIS concept is addressed (introduced) in NUREG-0654 wherein Evaluation Criterion G.2 states that "[m]ethods, consistent with JIS concepts, are established for coordinating and disseminating information to the public and media. Plans include the physical location(s) for interacting with the media." In addition, in NUREG-0654 Evaluation Criterion H.5 states that "[a] JIC is established, and its location is identified, to coordinate communication from Federal, State, local, and tribal government authorities and licensee personnel with the public and media." The Glossary section of NUREG-0654 provides the following definitions:

> Joint information system (JIS): a structured approach to organizing, integrating, and delivering information which ensures that timely, accurate, accessible, and consistent messages can be delivered across multiple jurisdictions and/or disciplines to the media, nongovernmental organizations, and the private sector. Critical supporting elements of the JIS include the plans, protocols, procedures, and structures used to provide public information.
>
> Joint information center (JIC): a location that facilitates operation of the JIS, where personnel with public information responsibilities perform critical emergency information functions, crisis communications, and public affairs functions.

Providing information to the news media is also addressed in NUREG-0696, Section 4, "Emergency Operations Facility," which states the following:

> At the licensee's option, the EOF may be a location for information dissemination to the public via the news media by designated spokespersons in accordance with the licensee's emergency plan. Provisions to allow periodic briefings of a

> press pool at the EOF should also be made. Actual use of this provision would depend on specific accident conditions and the emergency plan of the licensee. . . . Any location provided in the EOF for news media briefings shall be outside of the controlled access area. . . . If display capabilities for news media briefings are provided in the EOF, these displays shall be separated physically from the EOF functional displays.

The NRC staff reviewed the proposed change against the applicable guidance associated with the requirements for public education and information, including the JIS approach (described above), and determined that the proposed DECEP complies with the guidance. The NRC staff finds that the implementation of the concept of a JIS, where the Media Information function is supported remotely and removes reference to the near-site JICs is acceptable. Therefore, NUREG-0654 Evaluation Criteria G.2 and H.5 continues to be met and this change is acceptable.

Modify Quarterly Review of Transient Locations Within 10-mile EPZ

CNS, MNS, and ONS

Duke Energy states that the current CNS, MNS, and ONS Emergency Plans require the list of transient locations be reviewed quarterly and updated as needed. The transient location list is used to determine the businesses and public locations that receive the annual public information notice. There is no Evaluation Criterion in NUREG-0654, Revision 1, requiring a review frequency for the transient population locations, although NUREG-0654, Revision 1, Evaluation Criterion G.2 requires allowing the transient population within the 10-mile EPZ an opportunity to become aware of the information annually.

The proposed DECEP specifies the list of transient locations will be reviewed annually and updated as needed. Duke Energy states that the quarterly review of the transient location list was added in the CNS, MNS, and ONS Emergency Plans to allow “flexibility” in meeting changes to transient location needs. Public information booklets could be redirected to different locations based on changing needs. The proposed DECEP describes a requirement to review the list of transient locations annually, which coincides with the annual update and distribution of the public information booklets.

The NRC staff finds that the proposed DECEP meets the NUREG-0654 Evaluation Criterion G.1 requirement for annual dissemination of information to transient populations within the 10-mile EPZ. Therefore, NUREG-0654 Evaluation Criterion G.1 continues to be met and this change is acceptable.

3.2.7.4 Criterion II.G Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy has established provisions for adequate public education and information to support the emergency response. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(7) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.8 Criterion II.H, “Emergency Facilities and Equipment”

NUREG-0654, Evaluation Criterion II.H, addresses planning standard 10 CFR 50.47(b)(8), which states:

Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

Section IV.E.8.a of Appendix E to 10 CFR Part 50, requires that adequate provisions be made and described for emergency facilities and equipment, including a licensee's onsite TSC and an EOF from which effective direction can be given and effective control can be exercised during an emergency, and for a licensee's onsite OSC.

Section IV.E.8.b of Appendix E to 10 CFR Part 50 addresses various requirements associated with an EOF located more than 25 miles from a nuclear power reactor site.

Section IV.E.8.c of Appendix E to 10 CFR Part 50 requires EOF capabilities, which include supporting response to multiple reactors/sites and simultaneous event, if applicable.

Section IV.E.8.d of Appendix E to 10 CFR Part 50 requires an alternative facility (for use when onsite emergency facilities cannot be safely accessed during hostile actions) that would be accessible and could function as a staging area for augmentation of emergency response staff.

Section IV.G of Appendix E to 10 CFR Part 50 requires a description of provisions to be employed to ensure that the emergency plan, its implementing procedures, and emergency equipment and supplies are maintained up to date.

The NRC staff's primary focus for this criterion was to evaluate the DECEP against the guidance in NUREG-0654, Section II, Planning Standard H, which provides the detailed evaluation criteria that the NRC staff should consider when determining whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(8). However, the NRC staff also considered the applicable guidance in NUREG-0696 and NUREG-0737 (Supplement 1), applicable to the facility and equipment changes proposed in the LAR.

The requirements of 10 CFR 50.47(b)(8) and applicable requirements of Sections IV.E.8 and IV.G of Appendix E to 10 CFR Part 50, are addressed in Section H, "Emergency Facilities and Equipment," of the proposed DECEP and site-specific annexes.

3.2.8.1 Common Emergency Plan

The proposed DECEP describes the emergency facilities, including the TSC, OSC, EOF, Alternate Emergency Facility (AEF), and various systems, equipment and capabilities supporting emergency response. The JIC and JIS concept is described previously in Section 3.2.1.7 of this safety evaluation, which addresses public education and information associated with emergency response. The Duke Energy EOF, located at 526 South Church Street, Charlotte, NC, is the central location for management of the offsite emergency response, coordination of radiological assessment, and management of initial recovery operation. If the Church Street location cannot be used, the EOF can be set up and operated at either MNS or CNS. The EOF serves all operating Duke Energy nuclear sites and the NRC approved the adequacy of this common facility by letter dated August 21, 2017 (Reference 10).

The proposed DECEP also describes various plant and environmental information sources, monitoring systems, analysis equipment and supplies, and field monitoring capabilities that are available at each site to support emergency response and are required by the applicable guidance.

3.2.8.2 Emergency Plan Annexes

The site-specific annexes state that adequate emergency facilities and equipment to support the emergency response are provided and maintained. In addition, the TSC, OSC, and AEF, including locations, emergency response systems and capabilities, are described.

The site-specific annexes also describe specific meteorological, hydrologic, seismic, and process monitoring systems and capabilities.

3.2.8.3 Proposed Changes to Site-Specific Emergency Plans

Duke Energy identified one specific change to a site-specific emergency plan that involves a reduction in effectiveness related to this Evaluation Criterion, that has been proposed for the HNP Emergency Plan Annex.

Revise TSC Design Description

Duke Energy proposes to revise the TSC design description to modify the Seismic Category I, tornado, wind, and missile safety-related criteria. Section 3.4.6, "Revise TSC Design Description," of the HNP Enclosure 3, "Evaluation of Proposed Changes," states that the current HNP Emergency Plan describes the TSC as having exterior walls, roof, and floors that are built to Seismic Category I, tornado, wind, and missile safety-related criteria. However, several exceptions exist with regard to penetrations on the west exterior wall and building roof that are not constructed to Seismic Category I standards and are not designed to withstand the design basis tornado per Regulatory Guide 1.76, Revision 0, "Design Basis Tornado for Nuclear Power Plants," April 1974 (Reference 11)[1]. The proposed HNP Emergency Plan Annex modifies the description of the TSC, accordingly. NUREG-0654 Evaluation Criterion H.1 states that a TSC is established, using current Federal guidance, from which NPP [nuclear power plant] conditions are evaluated and mitigative actions are developed.

Section 3.4.6 of the HNP Enclosure 3 includes a table that compares the requirements contained in applicable NUREG guidance to the current design of the TSC, as described in design bases documents. Specifically, the HNP table evaluates the TSC description against the guidance in NUREG-0696 (Section 2.5, "Structure," for earthquakes, winds, and floods) and NUREG-0737, Supplement 1 (Section 8.2.1.d, for the Uniform Building Code). Duke Energy concluded by stating that the current design either meets the guidance specified in NUREG-0696 and NUREG-0737, Supplement 1, or provides an acceptable framework for ensuring the TSC structure is well-engineered, and that the facility is adequately designed to support Emergency Plan functions.

Duke Energy states that:

> Exterior walls, roof, and floor are built to Seismic Category I, tornado, wind, and missile safety-related criteria. The exceptions are several penetrations on the west exterior wall which are not constructed to Seismic Category I standards and

[1] See also, Regulatory Guide 1.76, Revision 1, "Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants," March 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML070360253), and the August 15, 2016, NRC memorandum, entitled "Results of Periodic Review of Regulatory Guide 1.76" (ADAMS Accession No. ML16208A347).

> various roof penetrations that are not tornado missile protected. The TSC penetrations on the west exterior wall comply with the minimum standards required of the NC Building Code and will therefore withstand the most adverse conditions reasonably expected during the design life of the plant.

Section 8.2.1.d of NUREG-0737, Supplement 1, states that the TSC should be structurally built in accordance with the Uniform Building Code. The guidance in Section 2.5 of NUREG-0696, further states the following:

> The TSC complex must be able to withstand the most adverse conditions reasonably expected during the design life of the plant including adequate capabilities for (1) earthquakes, (2) high winds (other than tornadoes), and (3) floods. The TSC need not meet Seismic Category I criteria or be qualified as an engineered safety feature. Normally, a well-engineered structure will provide an adequate capability to withstand earthquakes. Winds and floods with a 100-year-recurrence frequency are acceptable as a design basis. Existing buildings may be used to house the TSC complex if they satisfy the above minimum criteria.

The NRC staff considered the applicable guidance in NUREG-0696 and NUREG-0737, Supplement 1, in addition to the evaluation in the table in Section 3.4.6 of the HNP Enclosure 3 and finds that the proposed changes are acceptable because the TSC, as described in the HNP Emergency Plan Annex, complies with this guidance. In particular, the staff notes that NUREG-0737, Supplement 1, states that the TSC need not meet Seismic Category I criteria or be qualified as an engineered safety feature Therefore, NUREG-0654 Evaluation Criterion H.1 continues to be met and this change is acceptable.

3.2.8.4 Criterion II.H Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy has established provisions for adequate emergency facilities and equipment to support the emergency response. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(8) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.9 Criterion II.I, “Accident Assessment”

NUREG-0654, Evaluation Criterion II.I, addresses planning standard 10 CFR 50.47(b)(9), which states:

> Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

Section IV.B.1 of Appendix E to 10 CFR Part 50, requires a description of the means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials.

Section IV.E.2 of Appendix E to 10 CFR Part 50 requires a description of the equipment used for determining the magnitude of and for continually assessing the impact of the release of radioactive materials to the environment.

The requirements of 10 CFR 50.47(b)(9) and applicable requirements of Sections IV.B.1 and IV.E.2 of Appendix E to 10 CFR Part 50 are addressed in Section I, “Accident Assessment,” of the proposed DECEP and site-specific annexes.

3.2.9.1 Common Emergency Plan

The proposed DECEP states that isotopic composition of a release of radioactive material to the environment may be determined by (1) specialized gaseous monitors that distinguish between gasses, iodine, and particulate, (2) survey and sample analysis, or (3) source term estimates based on core damage and release pathway assumptions. The magnitude of a release of radioactive material to the environment is primarily identified directly by effluent monitors. Dose assessment modeling methods are capable of estimating source term and magnitude of gaseous releases from effluent monitors or plant parameter data and release rate projections.

Duke Energy uses site-specific versions of the Unified RASCAL Interface (URI) offsite dose projection computer model. The URI dose projection results and field monitoring readings are used in assessing radiological EALs and PARs. The URI dose projection results are given for various locations from the site boundary out to 10 miles, and the model is capable of providing dose assessment results for multiple release points from the site. The URI model is able to provide offsite radiological dose and dose rate estimates based on near real time or hypothetical inputs. The proposed DECEP states that each Duke Energy nuclear site has a permanent meteorological monitoring station located near the plant for the acquisition and recording of wind speed, wind direction, and ambient and differential temperatures for use in making offsite dose projections.

The FMTs are provided dedicated vehicles and equipment. FMTs are directed to track a radioactive plume by monitoring radiation levels and by obtaining and analyzing air samples. Field monitoring surveys and sampling may be performed at pre-identified locations or at other geographic locations within the EPZ as determined during the event.

Duke Energy FMTs will track the plume from a radiological release by monitoring radiation levels as indicated on radiological measuring instruments and by obtaining and analyzing air samples. FMT environmental survey and air sample results are compared with dose assessment results to validate or adjust projections. These results can be input into the Duke Energy URI dose assessment model to develop projections at different locations. Duke Energy personnel coordinate environmental radiological monitoring and assessment efforts with the States of North Carolina and South Carolina, as appropriate for the site. FMT environmental survey and air sample results are compared with dose assessment results to validate or adjust projections.

3.2.9.2 Emergency Plan Annexes

A complete description of Duke Energy’s accident assessment is provided in the proposed DECEP.

In the aftermath of the accident at Three Mile Island, Unit 2, the NRC imposed requirements on licensees for commercial nuclear power plants to install and maintain the capability to obtain and analyze post-accident samples of the reactor coolant and containment atmosphere. The desired capabilities of the Post-Accident Sampling System [or Station] (PASS) were described in NUREG-0737. The NRC staff reviewed industry justifications for the proposed elimination of PASS requirements based on the evaluations of the various radiological and chemical sampling

and their potential usefulness in responding to a severe reactor accident or making decisions regarding actions to protect the public from possible releases of radioactive materials. The NRC staff provided models to the industry for use to permit the NRC to efficiently process amendments that propose to remove requirements for PASS from plant technical specifications. An example for boiling water reactor licensees was published on March 20, 2002 (67 FR 13027). Each site-specific annex discusses the removal of the Post-Accident Sampling System and provides the associated license amendment approving the elimination of the requirement to have and maintain the PASS at each respective site. Additionally, each site-specific annex states that each site maintains a Chemistry Management Procedure that describes post-accident contingency plans for obtaining reactor coolant, drywell, and torus samples. In addition, procedures are in place to assess core damage under accident conditions.

3.2.9.3 Proposed Changes to Site-Specific Emergency Plans

Duke Energy identified one (1) specific change related to a site-specific emergency plan that involves a reduction in effectiveness under this Evaluation Criterion, for the BNP Emergency Plan Annex.

Increase in Minimum Detectable Activity (MDA) in Field Team air samples

Duke Energy states that the current BNP Emergency Plan requires field monitoring equipment to have the capability to detect radioiodine to an MDA of $5.0E^{-08}$ microcurie per cubic centimeter (µCi/cc). Duke Energy proposes a change to the required radioiodine MDA to $1.0E^{-07}$ µCi/cc in the proposed DECEP. Duke Energy further states that this MDA change meets the NUREG-0654 Evaluation Criterion I.7 of having the capability to detect and measure radioiodine concentrations in air in the plume exposure pathway EPZ as low as 10^{-7} µCi/cc. The NUREG-0654 Evaluation Criterion I.7 states,

> The capability to detect and measure radioiodine concentrations in air in the plume exposure pathway EPZ as low as 10-7 *µ*Ci/cc (microcuries per cubic centimeter) under field conditions is described. The sample collection process takes into account the sample flow rate, collection efficiency of the sample media used to collect the sample, duration of the sample, counter efficiency, and background radiation, including interference from the presence of noble gases.

Duke Energy states that an MDA of $5E^{-08}$ µCi/cc (the current BNP Emergency Plan MDA) correlates to a dose equivalent of 150 mrem per 24 hours of continuous occupational exposure, whereas an MDA of $1.0E^{-07}$ µCi/cc (the proposed DECEP MDA) correlates to a dose equivalent of 300 millirem (mrem) per 24 hours of continuous occupational exposure. Therefore, this proposed change in MDA represents an increase in exposure of 150 mrem. The regulations in 10 CFR 20.1201(a)(1)(i) state that the allowable annual dose limit for radiation workers is 5,000 mrem Total Effective Dose Equivalent (TEDE). Thus, the increase is a small fraction of the allowable annual dose for radiation workers (FMT) acquiring field samples. For members of the public, evacuation time estimate (ETE) studies show worst case evacuation times of less than 24 hours, and actual exposures for evacuated populations will be lower than 300 mrem due to the fact that those populations will have been exposed to the plume for less than the 24 hours assumed for resident populations. Accordingly, the potential dose to a member of the public is less than the 150 mrem difference noted for the FMT and would be a small fraction of the EPA PAGs dose limits (1,000 mrem TEDE and 5,000 mrem Committed Dose Equivalent Thyroid). Duke Energy states that the emergency planning functions continue to be met after the increase

in required radioiodine MDA to 1.0E^{-07} µCi/cc and that this increase aligns with the guidance in NUREG-0654, Evaluation Criterion I.7.

The NRC staff finds that this proposed change revises a more conservative value for detection capability and makes it consistent with the guidance of NUREG-0654 for having the capability to detect and measure radioiodine concentrations in air, in the plume exposure pathway EPZ, as low as 10^{-7} µCi/cc. Therefore, the staff finds that NUREG-0654 Evaluation Criterion I.7 continues to be met and this change is acceptable.

3.2.9.4 Criterion II.I Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy has established provisions for adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(9) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.10 Criterion II.J, "Protective Response"

NUREG-0654, Section II.J, addresses planning standard 10 CFR 50.47(b)(10), which states,

> A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. Evacuation time estimates have been developed by applicants and licensees. Licensees shall update the evacuation time estimates on a periodic basis. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.

Sections IV.2 and IV.3 of Appendix E to 10 CFR Part 50 requires nuclear power reactor licensees to use NRC-approved ETEs and updates to the ETEs in the formulation of PARs, and to provide the ETEs and ETE updates to State and local governmental authorities for use in developing offsite protective action strategies.

Section IV B.1 of Appendix E to 10 CFR Part 50 requires a description of the EALs that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety.

Section IV.I of Appendix E to 10 CFR Part 50 requires a range of protective actions to protect onsite personnel during hostile action to be developed to ensure the continued ability of the licensee to safely shut down the reactor and perform the functions of the licensee's emergency plan.

The requirements of 10 CFR 50.47(b)(10) and applicable requirements of Sections IV.2, IV.3, IV.B.1, and IV.I of Appendix E to 10 CFR Part 50 are addressed Section J, "Protective Response," of the proposed DECEP and site-specific annexes.

3.2.10.1 Common Emergency Plan

The proposed DECEP describes the means and time required to alert, notify, and provide protective actions for onsite individuals and individuals who may be in areas controlled by the licensee (including members of the public) during a radiological incident. The proposed DECEP states that the site assembly alarm and the PA system will be used to alert and notify onsite personnel of an emergency condition. Notification of persons who are in the public access areas, on or passing through the site, or within the owner-controlled area (OCA), will be performed by site Security. All personnel within the Protected Area will be accounted for within 30 minutes of a Site Area Emergency or General Emergency ECL. Any missing person(s) will be identified by Security, and search procedures will be implemented to locate unaccounted for persons. Accountability may be delayed during a security event if the Emergency Coordinator, in consultation with Security, determines that performing accountability could be detrimental to the safety of plant personnel.

The proposed DECEP states that during a Site Area or General Emergency ECL, a site evacuation of all non-essential personnel inside the OCA is conducted unless delayed due to safety issues. Non-essential personnel will then be directed to exit the site. Evacuation routes and evacuation locations for each site, including alternate locations and routes, are described in each of the site-specific annexes to the proposed DECEP.

Duke Energy, in coordination with the site-specific OROs, developed site-specific protective action strategies, informed by the site-specific ETEs and based on Federal guidance. The proposed DECEP states that applicable plume exposure pathway EPZ PARs to evacuate, shelter, and take potassium iodide are developed at the General Emergency ECL and provided to the ORO personnel responsible for making protective action decisions.

3.2.10.2 Emergency Plan Annexes

Each site-specific annex contains a description of evacuation routes and identifies the site-specific ETE report.

3.2.10.3 Proposed Changes to Site-Specific Emergency Plans

The licensee stated that there are no proposed changes to the facilities' site-specific emergency plans that involve a reduction in effectiveness under this Evaluation Criterion.

3.2.10.4 Criterion II.J Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy has developed a range of protective actions for the plume exposure pathway EPZ for emergency workers and the public. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(10) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.11 Criterion II.K Evaluation, "Radiological Exposure Control"

NUREG-0654, Evaluation Criterion II.K, addresses planning standard 10 CFR 50.47(b)(11), which states:

> Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.

Sections IV.E.1 and IV.E.3 of Appendix E to 10 CFR Part 50 require equipment at the site for personnel monitoring, and facilities and supplies for decontamination of onsite individuals.

The requirements of 10 CFR 50.47(b)(11) and applicable requirements of Sections IV.E.1 and IV.E.3 of Appendix E to 10 CFR Part 50 are addressed Section K, “Radiological Exposure Control,” of the proposed DECEP.

3.2.11.1 Common Emergency Plan

The proposed DECEP states that the onsite exposure guidelines for emergency workers are consistent with EPA PAG Manual Table 2-2, “Guidance on Dose Limits for Workers Performing Emergency Services.”

During onsite emergency incidents at the time of exposure when direct measurement is not feasible, the proposed DECEP states that if direct measurement of airborne concentrations is not available at time of exposure, workers will be provided respirator protection. The TEDE exposures will be calculated using follow-up survey data and whole-body counting equipment. Radiation doses received by emergency workers for the duration of the incident are monitored with radiation equipment, such as thermoluminescent dosimeters, wrist dosimetry, and/or finger dosimetry. In addition, other radiation detection devices (such as pocket ion chambers, electronic dosimeters, self-reading dosimeters, and pocket high radiation alarms) are available for use by emergency workers to allow real time measurement of exposure. Personnel dose records will be documented and managed using an electronic dose tracking system. If the electronic dose tracking system is not available, dose tracking will be maintained manually.

The proposed DECEP states that emergency teams that must enter areas where they might be expected to receive higher than normal doses will be briefed on the task assigned and the planned route to destination, allowed dose and dose rates, stay time, protective clothing and/or equipment as applicable. The team members will be instructed not to deviate from the planned route unless required by unanticipated conditions such as rescue or performance of an operation that would minimize the emergency condition. Offsite FMTs will be briefed on their duties and actions and what they are to do while in the field.

If emergency workers are expected to receive an exposure in excess of normal occupational limits, then dose extensions are determined and approved on a task basis. Approval is required before emergency workers are allowed to exceed normal occupational radiation dose limits. The Shift Manager or Emergency Coordinator would be responsible for authorizing exposures to radiation in excess of 10 CFR Part 20 limits. These types of authorizations are documented as part of the emergency exposure controls process.

The proposed DECEP states that non-Duke Energy emergency workers supporting onsite activities will be issued dosimetry and/or be monitored by RP personnel when responding to areas where a dose to radiation may be received. Dosimeters are available and will be provided to offsite agency responders for events that could result in exposure or entry into any radiologically controlled areas. This dosimetry issuance process and site access will be implemented by ERO RP and site security personnel.

Personnel leaving the contaminated areas are monitored to ensure that they and their clothing are not radioactively contaminated. Contamination on personnel will be removed in accordance with established RP procedures. Contaminated clothing or personal articles will be decontaminated or replaced. Radiation safety controls are established 24 hours per day to contain the spread of loose surface radioactive contamination.

3.2.11.2 Emergency Plan Annexes

A complete description of Duke Energy's radiological exposure control is provided in the proposed DECEP and is not addressed in the site-specific annexes.

3.2.11.3 Proposed Changes to Site-Specific Emergency Plans

The licensee stated that there are no proposed changes to the facilities' site-specific emergency plans that involve a reduction in effectiveness under this Evaluation Criterion.

3.2.11.4 Criterion II.K Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy has established appropriate means for controlling radiological exposures for emergency workers in an emergency. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(11) and applicable requirements of Section IV.E of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.12 Criterion II.L Evaluation, "Medical and Public Health Support"

NUREG-0654, Evaluation Criterion II.L, addresses planning standard 10 CFR 50.47(b)(12), which states:

> Arrangements are made for medical services for contaminated injured individuals.

Sections IV.E.4 and E.5 of Appendix E to 10 CFR Part 50, require provisions for facilities and medical supplies at the site for appropriate emergency first aid treatment, and arrangements for medical service providers qualified to handle radiation emergencies onsite.

Sections IV.E.6 of Appendix E to 10 CFR Part 50, requires that arrangements are made for transportation of contaminated injured individuals from the site to specifically identified treatment facilities outside the site boundary.

The requirements of 10 CFR 50.47(b)(12) and applicable requirements of Sections IV.E.4, E.5, and E.6 of Appendix E to 10 CFR Part 50 are addressed in portions of Section L, "Medical and Public Health Support," of the proposed DECEP and site-specific annexes.

3.2.12.1 Common Emergency Plan

The proposed DECEP describes medical and public health support. Duke Energy nuclear sites maintain first aid supplies and equipment for the treatment of injured persons. The on-shift Medical Emergency Response Team (MERT) and RP personnel will provide first aid to personnel who are injured and potentially contaminated. Medical equipment and supplies are

maintained by the MERT. Emergency treatment of injured personnel will normally be performed on the scene. It is anticipated that contaminated personnel will not leave the site except for cases that require offsite medical care.

Arrangements have been made with local hospitals for the medical treatment of contaminated injured personnel, and injured personnel are evaluated for radiological contamination (and wrapped to control contamination) prior to transport to a medical facility per RP department procedures. Primary and backup offsite medical facilities to provide treatment are described in the site-specific annexes to the proposed DECEP. The Radiation Emergency Assistance Center Training Site (REAC/TS), located at Oak Ridge, Tennessee, will respond to and/or provide advice and assistance to offsite medical facilities in the event of a severe radiation accident.

Duke Energy personnel are available to assist medical personnel with decontamination, radiation exposure, and contamination control. Hospitals are equipped, and hospital personnel are trained, to treat contaminated injured individuals. Training of medical support personnel at agreement hospitals includes basic training on the nature of radiological emergencies, diagnosis and treatment, and follow-up medical care. Radiological controls capability, including the isolation of contamination, assessment of contamination levels, radiation exposure monitoring for medical facility staff, collection of contaminated waste, and decontamination of treatment areas are described in licensee RP department and hospital procedures.

Radiation monitoring services are provided by Duke Energy personnel whenever it becomes necessary to use an ambulance service for the transportation of contaminated persons. Duke Energy personnel will assist with decontamination of transport vehicles, if necessary.

3.2.12.2 Emergency Plan Annexes

Each site-specific annex identifies the offsite primary and backup medical facilities that provide medical services, including treatment for a contaminated injured individual. Additionally, the annexes identify the ambulance service for transportation of injured personnel.

3.2.12.3 Proposed Changes to Site-Specific Emergency Plans

The licensee stated that there are no proposed changes to the facilities' site-specific emergency plans that involve a reduction in effectiveness under this Evaluation Criterion.

3.2.12.4 Criterion II.L Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy has established arrangements for medical services for contaminated injured individuals. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(12) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.13 Criterion II.M Evaluation, "Recovery and Reentry"

NUREG-0654, Evaluation Criterion II.M, addresses planning standard 10 CFR 50.47(b)(13), which states:

> General plans for recovery and reentry are developed.

Section IV.H of Appendix E to 10 CFR Part 50 requires a description of the criteria to be used to determine when, following an accident, reentry of the facility would be appropriate or when operation could be resumed.

The requirements of 10 CFR 50.47(b)(13) and applicable requirements of Section IV.H of Appendix E to 10 CFR Part 50 are addressed in portions of Section M, “Recovery and Reentry Planning and Post-Accident Operations,” of the proposed DECEP.

3.2.13.1 Common Emergency Plan

The proposed DECEP addresses general principles that serve as guides for developing a recovery plan. Guidance for determining the transition from an emergency to a recovery organization is provided in the Duke Energy fleet procedures. The composition of the recovery organization will depend on the nature of the accident and the conditions following the accident. It is the responsibility of the Emergency Coordinator, in consultation with the EOF Director, to determine that the facility and surroundings are safe for reentry. The EOF Director will designate a Recovery Manager and develop a recovery organization. Guidelines, as applicable to the specific situation, will be addressed prior to terminating the emergency and are delineated in the proposed DECEP.

The Recovery Manager will structure the recovery organization to accomplish the general objectives listed in the proposed DECEP. Members of the ERO will be informed when recovery is initiated. The recovery organization may be structured similar to the ERO, with additional modifications depending on the nature of the accident, post-accident conditions, and other factors. Figure M-1, “Recovery Organization,” in the proposed DECEP illustrates a generic recovery organization structure. The proposed DECEP states that it may be modified or supplemented as necessary to fit the particular circumstances. In some situations (such as no core damage), the normal organization may be adequate, and a recovery organization may not be needed.

3.2.13.2 Emergency Plan Annexes

A complete description of Duke Energy’s recovery, reentry, and post-accident operations is provided in the proposed DECEP and is not addressed in the site-specific annexes.

3.2.13.3 Proposed Changes to Site-Specific Emergency Plans

The licensee stated that there are no proposed changes to the facilities’ site-specific emergency plans that involve a reduction in effectiveness under this Evaluation Criterion.

3.2.13.4 Criterion II.M Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy has developed general plans for recovery and reentry. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(13) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.14 Criterion II.N Evaluation, “Exercises and Drills”

NUREG-0654, Evaluation Criterion II.N, addresses planning standard 10 CFR 50.47(b)(14), which states:

> Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.

Section IV.F of Appendix E to 10 CFR Part 50, requires a description of the program to provide for: (a) the training of employees and exercising, by periodic drills, of emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties, and (b) the participation in the training and drills by other persons whose assistance may be needed in the event of a radiological emergency.

The requirements of 10 CFR 50.47(b)(14) and applicable requirements of Section IV.F of Appendix E to 10 CFR Part 50 are addressed in portions of Section N, “Exercises and Drills,” of the proposed DECEP.

3.2.14.1 Common Emergency Plan

The proposed DECEP states that an exercise is an event that tests the integrated capability and a major portion of the elements of the emergency plans and organizations. Over the period of the exercise cycle, exercises will test the adequacy of timing and content of implementing procedures and methods, test emergency equipment and communications networks, test the public alert and notification system, and ensure that emergency organization personnel are familiar with their duties.

The proposed DECEP further states that following the observation of exercises and drills, a critique will be conducted to evaluate areas (such as personnel performance, response procedure processes, and facility and equipment adequacy) and identify issues. It enables Federal, State, and county representatives to observe and participate in drill and exercise critiques when present.

The proposed DECEP states the licensee will conduct a plume exposure pathway exercise biennially. Specifically, the plume exposure pathway exercise is developed to provide the ERO with the opportunity to demonstrate proficiency in key skills necessary to implement the principal functional areas of emergency response (those which test the adequacy of timing and content of implementing procedures, test equipment and communications networks, and ensure that the ERO personnel are familiar with their duties).

Additionally, the proposed DECEP provides a description of the types of exercises and drills, as well as a description of the various required scenario elements to be conducted within the eight-year exercise cycle.

3.2.14.2 Emergency Plan Annexes

A complete description of Duke Energy’s exercises and drills program is provided in the proposed DECEP and is not addressed in the site-specific annexes.

3.2.14.3 Proposed Changes to Site-Specific Emergency Plans

Duke Energy identified two (2) specific changes to site-specific emergency plans that involve a reduction in effectiveness related to this Evaluation Criterion, for each of the applicable site-specific annexes identified below.

Biennial Off-hours Report-in Drills

BNP

The current BNP Emergency Plan requires an annual off-hours report-in drill. NUREG-0654 Evaluation Criterion N.4.h requires that off-hours report-in drills be unannounced and conducted biennially. The proposed DECEP specifies that an unannounced off-hours report-in drill be performed biennially at each site. It further specifies that the EOF will conduct an off-hours unannounced report-in drill biennially concurrent with any one of the Duke Energy site's report-in drill. This would ensure consistent participation among all ERO members, since the EOF staff supports all six Duke Energy nuclear sites. This meets the NUREG-0654 Evaluation Criterion N.4.h requirement that off-hours report-in drills be unannounced and conducted biennially.

Duke Energy states that a biennial augmentation drill requiring travel to the site (report-in) was originally added in 1991 as part of Revision 31 of the BNP Emergency Plan (Reference 13). The biennial report-in drill frequency was increased from once per two years to twice per year as a result of a violation with associated White finding for failure of timely augmentation during an Alert declared on June 6, 2010 (Reference 14). Since the violation, the NRC approved a decrease in the frequency to once per year, based on successful drill performance since the implementation of corrective actions, in a letter dated August 21, 2017 (Reference 10). Duke Energy states that since submission of the common EOF license amendment request, the BNP ERO has not failed to respond within the required time during an augmentation drill or actual event and consequently, additional requirements beyond the NUREG-0654 guidance are no longer warranted.

ONS

The current ONS Emergency Plan requires an annual off-hours activation drill to test response times (report-in). NUREG-0654, Revision 1, does not require off-hours report-in drills. NUREG-0654 Evaluation Criterion N.4.h requires that off-hours report-in drills be unannounced and conducted biennially. The proposed DECEP specifies that an unannounced off-hours report-in drill be performed biennially at each site. It further specifies that the EOF will conduct an off-hours unannounced report-in drill biennially concurrent with any one of the Duke Energy site's report-in drills. This would ensure consistent participation among all ERO members, since the EOF staff supports all six Duke Energy nuclear sites. Duke Energy states that this meets the NUREG-0654 Evaluation Criterion N.4.h requirement that off-hours report-in drills be unannounced and conducted biennially.

Duke Energy states that the off-hours activation drill and initial semi-annual frequency was committed to by ONS in a letter to the NRC identifying corrective actions for weaknesses identified in the 1990 exercise (Reference 15). The frequency was changed to annual in 1996 in ONS Emergency Plan Revision 96-01 under 10 CFR 50.54(q) (Reference 16). Duke Energy further states that with the technical advancements in ERO notification systems described in its

application and no adverse trends identified for augmentation timeliness, the additional off-hours activation drill requirement beyond NUREG-0654 guidance is no longer warranted.

Based on the above analysis, the NRC staff finds that Duke Energy has acceptably addressed the guidance that off-hours report-in drills should be unannounced and conducted biennially as described in NUREG-0654. Therefore, NUREG-0654 Evaluation Criterion N.4.h continues to be met and these changes are acceptable.

Semi-annual Site Assembly Drill

ONS

The current ONS Emergency Plan requires that a site assembly drill be conducted semiannually. Duke Energy states that there is no NUREG-0654, Revision 1, Evaluation Criterion requiring that site assembly drills be conducted at any frequency. The proposed DECEP does not require that a site assembly drill be conducted at any frequency.

Duke Energy states that the current requirement was added to ONS Emergency Plan Revision 5, effective September 1, 1982 (Reference 17), from an ONS historical Technical Specification and was subsequently removed from the Technical Specifications, as approved by NRC staff in a Safety Evaluation dated November 22, 1982 (Reference 18). Duke Energy states that site assembly and accountability drill is a means to show compliance with the planning standard in 10 CFR 50.47(b)(10) and the guidance in NUREG-0654 for protection of onsite workers during emergencies. Performance of the protective response function is demonstrated in drills. EPIPs currently provide, and will continue to provide, conditions for conducting site assembly and accountability and subsequent evacuation of non-essential personnel. Duke Energy states that the proposed DECEP also provides conditions for evacuation and accountability of non-essential personnel consistent with the guidance in NUREG-0654. Therefore, the additional site assembly drill is redundant as a site assembly, since accountability and evacuation of non-essential personnel is demonstrated in drills and exercises as part of the function of protection for onsite workers during emergencies.

Based on the above analysis, the NRC staff finds that the site assembly drill is redundant and its finding are typically demonstrated by other drills, and its removal from the ONS Emergency Plan is therefore acceptable. Therefore, NUREG-0654 Evaluation Criteria N.2 and N.4 continue to be met and this change is acceptable.

3.2.14.4 Criterion II.N Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy will conduct periodic exercises to evaluate major portions of emergency response capabilities, conduct periodic drills to develop and maintain key skills, and adequately correct deficiencies identified as a result of exercises or drills. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(14) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.15 Criterion II.O, “Radiological Emergency Response Training”

NUREG-0654, Evaluation Criterion II.O, addresses planning standard 10 CFR 50.47(b)(15), which states:

Radiological emergency response training is provided to those who may be called on to assist in an emergency.

Section IV.F of Appendix E to 10 CFR Part 50 requires a description of the program to provide for: (a) the training of employees and exercising, by periodic drills, of emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties, and (b) the participation in the training and drills by other persons whose assistance may be needed in the event of a radiological emergency.

The requirements of 10 CFR 50.47(b)(15) and applicable requirements of Section IV.F of Appendix E to 10 CFR Part 50 are addressed in portions of Section O, "Radiological Emergency Response Training," of the proposed Duke Emergency Plan.

3.2.15.1 Common Emergency Plan

The proposed DECEP states that the radiological emergency response training is provided to those who may be called on to assist in an emergency.

Duke Energy provides initial training and annual retraining for members of the ERO and those offsite organizations that may be called upon to provide assistance to the site in the event of an emergency. Responsibilities for implementing the training program reside with site or corporate training departments, depending on the position or type of training needed.

The training program for emergency response personnel is developed based on the position-specific responsibilities. Besides general ERO training, Duke Energy has also identified the following personnel for subject area training: Shift Managers, TSC Emergency Coordinators and EOF Directors, accident assessment personnel, radiological field monitoring teams, fire brigade, repair and damage control teams, medical, first aid, rescue personnel, and security. Individuals assigned as first aid responders will maintain qualifications for rescue first aid and Cardio-Pulmonary Resuscitation training.

The proposed DECEP provides that the licensee will offer emergency response training annually (once per calendar year) to hospital, ambulance/rescue, police, and fire department personnel who are called upon to provide assistance during an emergency. Training includes basic RP, the notification process for their organization, and their organization's expected role.

3.2.15.2 Emergency Plan Annexes

A complete description of Duke Energy's radiological emergency response training is provided in the proposed DECEP and is not addressed in the site-specific annexes.

3.2.15.3 Proposed Changes to Site-Specific Emergency Plans

The licensee stated that there are no proposed changes to the facilities' site-specific emergency plans that involve a reduction in effectiveness under this Evaluation Criterion.

3.2.15.4 Criterion II.O Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy has established radiological emergency response training for those who may be called on to assist in an emergency. Therefore, the NRC staff has determined that the planning standard of

10 CFR 50.47(b)(15) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.16 Criterion II.P, “Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans”

NUREG-0654, Evaluation Criterion II.P, addresses planning standard 10 CFR 50.47(b)(16), which states:

> Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.

Section IV.G of Appendix E to 10 CFR Part 50, requires a description of the provisions to be employed to ensure that the emergency plan, its implementing procedures, and emergency equipment and supplies are maintained up to date.

The requirements of 10 CFR 50.47(b)(16) and applicable requirements of Section IV.G of Appendix E to 10 CFR Part 50 are addressed in Section P, “Responsibility for the Preparedness Effort,” of the proposed DECEP and site-specific annexes.

3.2.16.1 Common Emergency Plan

The proposed DECEP states that training for the emergency preparedness staff at the site consists of an initial and continuing training process. The Senior Vice President and Chief Nuclear Officer have the overall authority and responsibility for the proposed DECEP. The Fleet EP organization and management are responsible for the development, maintenance, review, and updating of the emergency plan, as well as the coordination of the plan with other response organizations. Site EP personnel and management are responsible for the development, maintenance, review, and updating of their site-specific annexes and coordination with other organizations at or near the site.

The proposed DECEP (common plan, site annexes, and site extension documents) will be reviewed and certified to be current on an annual basis and updated if necessary. These updates consider any changes due to regulatory revisions, issues identified by drills and exercises, or other matters; the updates will be incorporated into the proposed DECEP. Agreements with supporting organizations (MOUs, LOAs) will be reviewed and certified to be current on an annual basis and updated, if necessary. Changes to agreements may be coordinated with the annual review of the DECEP.

The proposed DECEP states that the EP Program elements are reviewed by persons that have no direct responsibility for the implementation of the EP Program, in accordance with 10 CFR 50.54(t).

An independent review of the EP Program for each site and the corporate office is performed as required. All elements of the EP Program will be reviewed once every 24 months. Additionally, a review will be conducted as soon as reasonably practicable after a change occurs in personnel, procedures, equipment, or facilities that potentially could adversely affect the EP Program, but no longer than 12 months after the change.

The Duke Energy ERO contact information is verified routinely and updated as needed. Facility and support contact information in the Emergency Communications Directory will be verified quarterly and updated as needed.

3.2.16.2 Emergency Plan Annexes

Each site-specific annex includes a listing of external emergency plans specific to the support of that site, and a listing of the procedures required to maintain and implement the emergency plan.

3.2.16.3 Proposed Changes to Site-Specific Emergency Plans

Duke Energy identified one (1) specific change to the facilities' site-specific emergency plans that involves a reduction in effectiveness related to this Evaluation Criterion for all of the site-specific annexes.

Remove Telephone Directory Review Frequency

The current site-specific emergency plans require phone listings in emergency procedures to be updated quarterly. NUREG-0654 Evaluation Criterion P.10 requires periodic review and updating of contact information in the emergency plan and implementing procedures. The proposed DECEP specifies that the emergency telephone directory (ORO, ERF, and support organizations) is reviewed routinely as described in implementation procedures. Duke Energy intends to continue the quarterly review of ERO contact information.

The NRC staff finds that the proposed DECEP and site-specific annexes continue to ensure that the contact information is verified routinely and updated as needed. Therefore, NUREG-0654 Evaluation Criterion P.10 continues to be met and this change is acceptable.

3.2.16.4 Criterion II.P Evaluation Conclusion

Based on the above analysis, the NRC staff concludes that Duke Energy has identified the responsibilities for plan development/review, for distribution of emergency plans, and that planners are properly trained. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(16) and applicable requirements of Appendix E to 10 CFR Part 50 have been adequately addressed.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, officials of the States of North Carolina and South Carolina were notified of the proposed issuance of the amendments on June 28, 2021. The State officials had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change the site emergency plans, and relate, in part, to changes in recordkeeping, reporting, or administrative procedures or requirements. The amendments also relate, in part, to changed requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no

significant increase in individual or cumulative occupational or public radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, published in the *Federal Register* on October 6, 2020 (85 *FR* 63146), and there has been no public comment on such finding. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and 51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

6.0 CONCLUSION

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

7.0 TABLE OF ABBREVIATIONS

AEF	Alternate Emergency Facility
ANS	Alert and Notification System
ASO	Alarm Station Operator
BNP	Brunswick Steam Electric Plant Units 1 and 2
CNS	Catawba Nuclear Station Units 1 and 2
DECEP	Duke Energy Common Emergency Plan
EAL	Emergency action levels
ECCS	Emergency core cooling system
ECL	Emergency classification level
ENS	Emergency Notification System
EOF	Emergency Operations Facility
EP	Emergency planning and preparedness
EPA	Environmental Protection Agency
EPZ	Emergency planning zones
ERDS	Emergency Response Data System
ERF	Emergency response facility
ERO	Emergency response organization
ETE	Evacuation time estimate
FEMA	Federal Emergency Management Agency
FMT	Field monitoring team
FR	Federal Register
FSG	FLEX Support Guidelines
HNP	Shearon Harris Nuclear Power Plant Unit 1
I&C	Instrumentation and control
ICP	Incident Command Post
ISG	Interim Staff Guidance
IT	Information Technology
JIC	Joint Information Center
JIS	Joint Information System
LAR	License amendment request
LOA	Letters of agreement
MDA	Minimum Detectable Activity
MERT	Medical Emergency Response Team
MNS	McGuire Nuclear Station Units 1 and 2
MOU	Memorandum of understanding
NC	North Carolina
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NWS	National Weather Service
OCA	Owner-controlled area
ONS	Oconee Nuclear Station Units 1, 2, and 3
ORO	Offsite response organizations
OSC	Operations Support Center
PA	Public Address
PAG	Protective Action Guides
PBX	Private Branch Exchange
RASCAL	A nuclear power plant source term calculations computer model
RNP	H. B. Robinson Steam Electric Plant Unit 2
RP	Radiation Protection

SC	South Carolina
STA	Shift Technical Advisor
TEDE	Total Effective Dose Equivalent
TMI	Three Mile Island
TSC	Technical Support Center
URI	Unified RASCAL Interface

8.0 REFERENCES

1. Letter from Duke Energy to U.S. Nuclear Regulatory Commission, “License Amendment Request for Common Emergency Plan Consistent with NUREG-0654, Revision 2,” dated September 3, 2020 (ADAMS Accession No. ML20247J468).

2. Letter from Duke Energy. to U.S. Nuclear Regulatory Commission, “Response to Request for Additional Information Regarding License Amendment Request for Common Emergency Plan,” dated March 11, 2021 (ADAMS Accession No. ML21071A152).

3. Letter from Duke Energy. to U.S. Nuclear Regulatory Commission, “Supplemental Information Regarding License Amendment Request for Common Emergency Plan,” dated May 4, 2021 (ADAMS Accession No. ML21124A180).

4. U.S. Nuclear Regulatory Commission and Federal Emergency Management Agency, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” NUREG-0654/FEMA-REP-1, Revision 2 dated December 2019 (ADAMS Accession No. ML19347D139).

5. U.S. Nuclear Regulatory Commission, NSIR/DPR-ISG-01, “Interim Staff Guidance-Emergency Planning for Nuclear Power Plants,” Revision 0, dated November 2011 (ADAMS Accession No. ML113010523).

6. U.S. Nuclear Regulatory Commission, NUREG-0696, “Functional Criteria for Emergency Response Facilities,” dated February 1981 (ADAMS Accession No. ML051390358).

7. U.S. Nuclear Regulatory Commission, NUREG-0737, Supplement 1, “Clarification of TMI Action Plan Requirements – Requirements for Emergency Response Capability (Generic Letter No. 82-33),” dated January 1983 (ADAMS Accession No. ML102560009).

8. Nuclear Energy Institute, NEI 99-01, Revision 6, “Development of Emergency Action Levels for Non-Passive Reactors,” dated November 2012 (ADAMS Accession No. ML12326A805).

9. Letter from U.S. Nuclear Regulatory Commission to Ms. Susan Perkins-Grew, Nuclear Energy Institute, “U.S. Nuclear Regulatory Commission Review and Endorsement of NEI 99-01, Revision 6, dated November 2012 (TAC No. D92368),” dated March 28, 2013 (ADAMS Accession No. ML12346A463).

10. Letter from U.S. Nuclear Regulatory Commission, “Brunswick Steam Electric Plant, Units 1 and 2; Shearon Harris Nuclear Power Plant, Unit 1; H.B. Robinson Steam Electric Plant Unit No. 2; and Oconee Nuclear Station, Units 1, 2, and 3 - Issuance of Amendments to Consolidate Emergency Operations Facilities and Associated Emergency Plan Changes (CAC Nos. MF7650, MF7651, MF7652, MF7653, MF7654, MF7655, MF7656, MF7657, MF7658, MF7659, AND MF7660),” dated August 21, 2017 (ADAMS Accession No. ML17188A387).

11. Regulatory Guide 1.76, Revision 0, “Design Basis Tornado for Nuclear Power Plants,” April 1974 (ADAMS Accession No. ML003740273).

12. U.S. Environmental Protection Agency, “EPA-400-R-92-001, ‘Manual of Protective Action Guides and Protective Actions for Nuclear Incidents,’” dated May 1992.

13. Letter from Carolina Power & Light Company to U.S. Nuclear Regulatory Commission, “Emergency Planning,” dated April 4, 1991 (ADAMS Accession No. ML20072T761).

14. Letter from U.S. Nuclear Regulatory Commission, “Brunswick Steam Electric Plant - NRC Special Inspection Report 05000325/2010007 and 05000324/2010007; Preliminary White Finding,” dated October 20, 2010 (ADAMS Accession No. ML102930092).

15. Letter from Duke Power Company to U.S. Nuclear Regulatory Commission, “Oconee Nuclear Station Docket Nos. 50-269, 50-270, 50-287 Inspection Report 90-26 Annual Exercise,” dated January 7, 1991 (ADAMS Accession No. ML15224A743).

16. Letter from Duke Power Company to U.S. Nuclear Regulatory Commission, “Oconee Nuclear Station Docket Nos. 50-269, 50-270, 50-287 Emergency Plan,” dated February 13, 1996 (ADAMS Accession No. ML15238A218).

17. Letter from Duke Power Company to U.S. Nuclear Regulatory Commission, “Oconee Nuclear Station Docket Nos. 50-269, 50-270, 50-287,” dated September 14, 1982 (ADAMS Accession No. ML16162A390).

18. Letter from U.S. Nuclear Regulatory Commission to Duke Power Company, “Issuance of Amendments 117, 117 and 114, incorporating Digital Logic Channels and Emergency Power Switching Logic,” dated November 22, 1982 (ADAMS Accession No. ML012140380).

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Date: August 26, 2021

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2; MCGUIRE NUCLEAR STATION, UNITS 1 AND 2; OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3; BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2; SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1; AND H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 – ISSUANCE OF AMENDMENTS FOR COMMON EMERGENCY PLAN CONSISTENT WITH NUREG-0654, REVISION 2 (EPID L-2020-LLA-0198) DATED: AUGUST 26, 2021

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