



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

September 21, 2018

Mr. Tom Vehec  
Vice President  
Southern Nuclear Operating Company, Inc.  
Edwin I. Hatch Nuclear Plant  
11028 Hatch Parkway North  
Baxley, GA 31513

**SUBJECT: EDWIN I. HATCH NUCLEAR PLANT – NUCLEAR REGULATORY  
COMMISSION TEAM INSPECTION REPORT 05000321/2018011  
AND 05000366/2018011**

Dear Mr. Vehec:

On August 23, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Edwin I. Hatch Nuclear Plant Units 1 and 2. The NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

The inspection examined activities conducted under your license as they relate to the implementation of Mitigation Strategies and Spent Fuel Pool Instrumentation Orders (EA-12-049 and EA-12-051) and Emergency Preparedness Communication/Staffing/Multi-Unit Dose Assessment Plans, your compliance with the Commission's rules and regulations, and with the conditions of your operating license. Within these areas, the inspection involved examination of selected procedures and records, observation of activities, and interviews with station personnel.

The NRC inspectors did not identify any finding or violation of more than minor significance. This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

T. Vehec

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If you have any questions, please contact me at 404-997-4513.

Sincerely,

*/RA/*

Shane Sandal, Chief  
Reactor Projects Branch 6  
Division of Reactor Projects

Docket Nos.: 50-321, 50-366  
License Nos.: DPR-57 and NPF-5

Enclosure:  
IR 05000321/2018011, 05000366/2018011

cc Distribution via ListServ

T. Vehec

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COMMISSION TEAM INSPECTION REPORT 05000321/2018011  
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**ADAMS Accession No. ML18264A038**

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**U.S. NUCLEAR REGULATORY COMMISSION  
Inspection Report**

Docket Numbers: 50-321, 50-366

License Numbers: DPR-57, NPF-5

Report Numbers: 05000321/2018011 and 05000366/2018011

Enterprise Identifier: I-2018-011-0044

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Edwin I. Hatch Nuclear Plant

Location: Baxley, Georgia

Inspection Dates: August 20 - 23, 2018

Inspectors: R. Rodriguez, Senior Project Engineer (Team Leader)  
S. Sanchez, Senior Reactor Inspector  
J. Hickman, Resident Inspector  
D. Mas-Penaranda, Project Engineer

Approved By: S. Sandal, Chief  
Reactor Projects Branch 6  
Division of Reactor Projects

Enclosure

## SUMMARY

The NRC continued monitoring licensee's performance by conducting Temporary Instruction (TI) 2515/191, "Implementation of Mitigation Strategies and Spent Fuel Pool (SFP) Instrumentation Orders and Emergency Preparedness Communication/Staffing/Multi-Unit Dose Assessment Plans," inspection (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18191B074) at Edwin I. Hatch Nuclear Plant Units 1 and 2, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

### List of Findings and Violations

No findings or violations of more than minor significance were identified.

### Additional Tracking Items

Type	Issue number	Title	Report Section	Status
TI	TI 2515/191	Inspection of the Implementation of Mitigation Strategies and Spent Fuel Pool Instrumentation Orders and Emergency Preparedness Communication/Staffing/Multi-Unit Dose Assessment Plans	Other Activities	Closed

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## INSPECTION SCOPE

Inspections were conducted using the appropriate portions of Temporary Instruction (TI) procedure 2515/191, "Implementation of Mitigation Strategies and Spent Fuel Pool (SFP) Instrumentation Orders and Emergency Preparedness Communication/Staffing/Multi-Unit Dose Assessment Plans," (ADAMS Accession No. ML18191B074). Documents reviewed by inspectors are listed in the documents reviewed section of this report. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

## OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

### TI 2515/191 - Inspection of the Implementation of Mitigation Strategies and Spent Fuel Pool Instrumentation Orders and Emergency Preparedness Communication/Staffing/Multi-Unit Dose Assessment Plans

Inspectors verified plans for complying with NRC Orders EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12056A045) and EA-12-051, "Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," (ML12054A679) were in place and were being implemented by the licensee. Additionally, the inspection verified implementation of staffing and communications information provided in response to the March 12, 2012, request for information letter (ML12053A340) and dose assessment information provided per COMSECY-13-0010, "Schedule and Plans for Tier 2 Order on Emergency Preparedness for Japan Lessons Learned," dated March 27, 2013 (ML12339A262).

- (1) Based on samples selected for review, the inspectors verified that the licensee satisfactorily implemented appropriate elements of the Diverse and Flexible Coping Strategies (FLEX) as described in the plant-specific submittals and the associated safety evaluation (ML17179A286) and determined that the licensee is in compliance with NRC Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (ML12056A045). The inspectors verified the licensee satisfactorily:
  - a) developed and issued FLEX Support Guidelines (FSGs) to implement the FLEX strategies for postulated external events;
  - b) integrated their FSGs into their existing plant procedures such that entry into and departure from the FSGs were clear when using existing plant procedures;
  - c) protected FLEX equipment from site-specific hazards;
  - d) developed and implemented adequate testing and maintenance of FLEX equipment to ensure their availability and capability;
  - e) trained their staff to ensure personnel proficiency in the mitigation of beyond-design basis events; and

- f) developed the means to ensure the necessary off-site FLEX equipment would be available from off-site locations.
- (2) Based on samples selected for review, the inspectors verified that the licensee satisfactorily implemented appropriate elements of the FLEX strategy as described in the plant specific submittals and the associated safety evaluation (ML17179A286) and determined that the licensee was in compliance with NRC Order EA-12-051, "Order Modifying Licenses With Regard to Reliable Spent Fuel Pool Instrumentation" (ML12054A679). The inspectors verified that the licensee satisfactorily:
- a) installed the spent fuel pool (SFP) instrumentation sensors, cabling and power supplies to provide physical and electrical separation as described in the plant specific submittals and safety evaluation;
  - b) installed the SFP instrumentation display in the location, environmental conditions and accessibility as described in the plant-specific submittals;
  - c) trained their staff to ensure personnel proficiency with the maintenance, testing, and use of the SFP instrumentation; and
  - d) developed and issued procedures for maintenance, testing and use of the reliable SFP instrumentation.
- (3) The inspectors reviewed information provided in the licensee's dose submittal and in response to the NRC's March 12, 2012, request for information letter (ML12053A340), and verified that the licensee satisfactorily implemented enhancements pertaining to Near-Term Task Force (NTTF) Recommendation 9.3 response to a large-scale natural emergency event that results in an extended loss of all alternating current (ac) power (ELAP) to all site units and impedes access to the site. The inspectors verified the following:
- a) the licensee satisfactorily implemented required staffing changes to support a ELAP scenario;
  - b) emergency preparedness (EP) communications equipment and facilities are sufficient for dealing with a ELAP scenario; and
  - c) the licensee implemented dose assessment capabilities (including releases from SFPs) using the licensee's site-specific dose assessment software and approach.

The inspectors verified that noncompliances with requirements, and standards identified during the inspection were entered into the licensee's corrective action program as appropriate.

## **INSPECTION RESULTS**

No findings were identified.



## **EXIT MEETINGS AND DEBRIEFS**

No proprietary information was retained by the inspectors or documented in this report.

On August 23, 2018, the inspectors presented the inspection results to Mr. T. Vehec, Site Vice President, and other members of the licensee's staff.

## DOCUMENTS REVIEWED

### Condition Reports Initiated as a Result of the Inspection

10527657, FLEX bolt thread PMs  
10527679, HNP NRC FLEX Audit Dome Material Conditions  
10527695, NRC walkdown material condition West Cable way  
10527914, HNP NRC FLEX Audit load shed walkdown comment  
10528292, FLEX audit observed inconsistencies in circle slash methods for past PM work orders  
10527700, Revise NMP-OS-019-059 to include location of tooling for emergency opening Dome doors  
10528430 FLEX Staffing Study did not document resources to obtain CST Level  
10527184 NMP-OS-019-293 Procedure Enhancement  
10527703 NRC Resident Walkdown material condition - FLEX Walkdown  
10528253 HNP NRC FLEX Inspection walkdown comments - RB Roof Conditions  
10528469 HNP Maintaining a Priority on FLEX

### Procedures

31EO-FSG-003-2, FSG – ELAP (Extended Loss of AC Power), Ver. 3.1  
NMP-EP-147, Offsite Dose Assessment, Ver. 2.1  
NMP-OS-019-003, Security Support for Beyond Design Basis Events, Ver. 1.1  
NMP-OS-019-013, Beyond Design Basis Equipment Unavailability Tracking, Ver. 3.0  
NMP-OS-019-253, Hatch Unit C SIG-12, Mode 5 RPV Inventory Control, Ver. 2.2  
NMP-OS-019-254, Hatch Unit C SIG-11, Critical Instrumentation, Ver. 3.0  
NMP-OS-019-256, Hatch Unit C Initial Site Damage Assessment, Ver. 4.0  
NMP-OS-019-257, Hatch Unit C Diesel Fuel Oil Transfer, Ver. 1.1  
NMP-OS-019-258, Miscellaneous FLEX Equipment, Ver. 1  
NMP-OS-019-259, Hatch Unit C SIG-9, Communications, Ver. 1.2  
NMP-OS-019-261, Hatch Unit 1 SIG-1, 4160V Alternate Power, Ver. 2  
NMP-OS-019-262, Hatch Unit C SIG -2, 600V Alternate Power Division 1, Ver. 6.2  
NMP-OS-019-264, Hatch Unit 1 SIG-4, Reactor Pressure Vessel Makeup, Ver. 2.0  
NMP-OS-019-266, Hatch Unit 1 SIG-6, Containment Integrity, Ver. 2.1  
NMP-OS-019-268, Hatch Unit 1 SIG-8, Spent Fuel Makeup, Ver. 3.1  
NMP-OS-019-270, Hatch Unit 1 SIG-10, Ventilation, Ver. 1.1  
NMP-OS-019-281, Hatch Unit 2 SIG-1, 4160V Alternate Power, Ver. 2  
NMP-OS-019-282, Hatch Unit C SIG -2, 600V Alternate Power Division 2, Ver. 6.2  
NMP-OS-019-293, FLEX 600V Diesel Generator Operating Instruction, Ver. 1  
NMP-OS-019-296, FLEX RapidCom Generator Operating Instructions, Ver. 1  
NMP-OS-019-299, FLEX Light Tower Operating Instruction, ver. 1  
NMP-ES-005, Scoping and Importance Determination for Equipment Reliability, Ver. 17.0  
NMP-GM-038, Diverse and Flexible Coping Strategies (FLEX) Program, Ver. 2.0  
NMP-GM-038-002, Hatch Nuclear Plant Diverse and Flexible Coping Strategies (FLEX) Program Document, Ver. 3.0  
NMP-MA-050, Work Package Preparation, Ver. 6.1  
NMP-OM-002, Shutdown Risk Management, Ver. 5.0  
31EO-FSG-003-1, FSG – ELAP (Extended Loss of AC Power), Ver. 2.0  
34AB-G41-001-1, Loss of Fuel Pool Cooling, Ver. 6.6  
34GO-OPS-007-0, Shutdown/Refueling Mode Preparation for Flex, Ver. 1.2  
34GO-OPS-030-1, Daily Inside Rounds, Ver.33.1  
57IT-G41-001-0, Flex Pool Level Sensors, Ver. 3.0  
RapidRack 1X86E018 Functional Test and PM, Ver. 3.0  
34IT-FLE-002-0, FLEX Storage Building Equipment Checks, Ver. 2

31EO-FSG-003-1, FSG – ELAP (Extended Loss of AC Power), Ver. 2.1  
31EO-FSG-003-2, FSG – ELAP (Extended Loss of AC Power), Ver. 3.1

Drawings

D-11004, Edwin I. Hatch Nuclear Plant Unit 1 P&ID – R.H.R Service Water Outside Building,  
Ver. 43  
H-21039, Edwin I. Hatch Nuclear Plant Unit 2 P&ID – R.H.R Service Water, Ver. 48

Design Changes

DCP SNC467474, Unit 2 FLEX Alternate Power  
DCP SNC467488, Unit 2 Flex Core Cooling  
DCP SNC467489, Unit 2 FLEX Condensate Storage Tank

Condition Reports

10313397	10505569	10279510
10317995	10505570	10350442
10336555	10513860	10367864
10345427	10274476	10437236
10345429	10294000	10303704
10376424	10364690	10481351
10388441	10442844	10311058
10388459	10477543	10379670
10396083	10482391	10472446
10399336	10503233	10514717
10436501	10514374	10314760
10437237	10505569	10436989
10503233	10505570	10323081
	10513860	10329317
	10256152	

Work Orders

SNC808521, 57IT-G41-001-0 Flex Pool Level Sensors, dated 12/2/16  
SNC829784, 57IT-G41-001-0 Flex Pool Level Sensors, dated 1/23/18  
SNC829789, 57IT-G41-001-0 Flex Pool Level Sensors, dated 12/7/17  
SNC847511, FLEX Booster Pump Operational Inspection, dated 12/5/17  
SNC889967, Flex Diesel Powered Lights, dated 6/11/18  
SNC911773, Flex Booster Pump Inoperable, dated 1/5/18  
SNC756506, FLEX PM : 600V FLEX Generator Operational Inspection, dated 12/6/2016  
SNC846059, FLEX Support PM: 600V FLEX D/G Cable Trailer Functional Test & Inspection,  
dated 12/4/2017  
SNC846063, FLEX PM: 600V FLEX Diesel Generator Functional Test & Inspection, dated  
12/8/2017  
SNC847524, FLEX PM: 600V FLEX Generator Operational Inspection, dated 12/6/2017  
SNC889973, FLEX Support PM: 600V FLEX D/G Cable Trailer Functional Test & Inspection,  
dated 6/19/2018  
SNC889977, FLEX PM: 600V FLEX Diesel Generator Functional Test & Inspection, dated  
6/26/2018  
SNC915082, 1 Year PM FLEX Mode 5 Core Cooling Pump Operational Inspection,  
dated June 13, 2018

SNC821126, FLEX Support PM: RapidCase Communications Functional Test & Inspection, dated 8/17/17  
SNC822483, FLEX Support PM: RapidCom Communications Functional Test & Inspection, dated 10/26/17  
SNC84287, FLEX Support PM: RapidCase Communications Functional Test & Inspection, dated 1/25/18  
SNC857772, FLEX Support PM: RapidCom Communications Functional Test & Inspection, dated 4/3/18  
SNC887274, FLEX Support PM: RapidCase Communications Functional Test & Inspection, dated 8/8/18

#### Other

NMP-GM-038-002, Hatch Nuclear Plant Diverse and Flexible Coping Strategies (FLEX) Program Document, Ver. 3  
NMP-GM-038, Diverse and Flexible Coping Strategies (FLEX) Program, Ver. 2  
HNP-FLEX-2016-19, Hatch Nuclear Plant FLEX Verification and Validation Report, dated 2/27/2016  
S76305, Report of Liquefaction Potential Assessment FLEX Dome Storage Building and Travel Paths Hatch Nuclear Plant (HNP), date 10/3/2014  
FHC-S-13-001/X1AR50, Procurement Specification for FLEX equipment Storage Building, Ver. 1  
SNC600781, Hatch FLEX dome infrastructure, Ver. 2  
August 2018 NRC TI-191 Inspection Plant Hatch FLEX Overview Slides  
DOEJ-HRSNC600781-C001, Evaluation of Tie-Downs for Equipment in the FLEX Storage Building, Ver. 1.0  
Diesel Fuel Supply Assurance Letter from Diversified Energy Supply, dated June 27, 2018  
Edwin I. Hatch Nuclear Plant, Units 1 and 2-Safety Evaluation Regarding Implementation of Mitigating Strategies and Reliable Spent Fuel Pool Instrumentation Related to Orders EA-12-049 and EA-12-051, dated 8/4/17  
Edwin I. Hatch Nuclear Plant, Units 1 and 2-Notification of Full Compliance of Required Action for NRC Order EA-12-051 Reliable Spent Fuel Pool Instrumentation, dated 2/13/17  
Hatch Nuclear Plant FLEX Verification & Validation Report, dated 2/28/16  
Safer Response Plan for Edwin I. Hatch Nuclear Plant, dated 8/11/15  
S-76305, Report of Liquefaction Potential Assessment for Flex Dome Storage Building and Travel Paths Hatch Nuclear Plant, dated 10/3/14  
SNC600781-05, Hatch Dome Infrastructure, dated 3/2/16