



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, ILLINOIS 60532-4352

August 9, 2021

Mr. David Rhoades  
Senior VP, Exelon Generation Company, LLC  
President and CNO, Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: CLINTON POWER STATION – INTEGRATED INSPECTION REPORT  
05000461/2021002

Dear Mr. Rhoades:

On June 30, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Clinton Power Station. On July 8, 2021, the NRC inspectors discussed the results of this inspection with Ms. N. Plumey, Plant Manager, and other members of your staff. The results of this inspection are documented in the enclosed report.

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

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 Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

A handwritten signature in black ink, appearing to read "Ken Riemer".

Signed by Riemer, Kenneth  
on 08/09/21

Kenneth R. Riemer, Chief  
Branch 1  
Division of Reactor Projects

Docket No. 05000461  
License No. NPF-62

Enclosure:  
As stated

cc w/ encl: Distribution via LISTSERV®

Letter to David Rhoades from Kenneth Riemer dated August 09, 2021.

SUBJECT: CLINTON POWER STATION – INTEGRATED INSPECTION REPORT  
05000461/2021002

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

Docket Number: 05000461

License Number: NPF-62

Report Number: 05000461/2021002

Enterprise Identifier: I-2021-002-0073

Licensee: Exelon Generation Company, LLC

Facility: Clinton Power Station

Location: Clinton, IL

Inspection Dates: April 01, 2021 to June 30, 2021

Inspectors: J. Beavers, Senior Resident Inspector  
J. Murphy, Illinois Emergency Management Agency  
E. Sanchez Santiago, Senior Reactor Inspector  
D. Sargis, Resident Inspector

Approved By: Kenneth R. Riemer, Chief  
Branch 1  
Division of Reactor Projects

Enclosure

## SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Clinton Power Station, 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
LER	05000461/2020-001-00	LER 2020-001-00 for Clinton Power Station, Unit 1, Reportable Contraband Event	71153	Closed

## PLANT STATUS

Unit 1 began the inspection period at rated thermal power and remained at or near rated thermal power for the remainder of the inspection period.

## INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." 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.

Starting on March 20, 2020, in response to the National Emergency declared by the President of the United States on the public health risks of the coronavirus (COVID-19), resident and regional inspectors were directed to begin telework and to remotely access licensee information using available technology. During this time, the resident inspectors performed periodic site visits each week, increasing the amount of time on site as local COVID-19 conditions permitted. As part of their onsite activities, resident inspectors conducted plant status activities as described in IMC 2515, Appendix D; observed risk significant activities; and completed on site portions of IPs. In addition, resident and regional baseline inspections were evaluated to determine if all or a portion of the objectives and requirements stated in the IP could be performed remotely. If the inspections could be performed remotely, they were conducted per the applicable IP. In some cases, portions of an IP were completed remotely and on site. The inspections documented below met the objectives and requirements for completion of the IP.

## REACTOR SAFETY

### 71111.01 - Adverse Weather Protection

#### Seasonal Extreme Weather Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of summer readiness for the following systems:

switchyard, transformers, and main generator on June 30, 2021

#### External Flooding Sample (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated that flood protection barriers, mitigation plans, procedures, and equipment are consistent with the licensee's design requirements and risk analysis assumptions for coping with external flooding on June 28, 2021.

#### 71111.04 - Equipment Alignment

##### Partial Walkdown Sample (IP Section 03.01) (6 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) 'B' residual heat removal train on April 13, 2021
- (2) low pressure core spray on April 22, 2021
- (3) 'B' standby gas treatment on May 13, 2021
- (4) Division II shutdown service water on May 19, 2021
- (5) 'A' residual heat removal system on May 20, 2021
- (6) Division III shutdown service water on June 25, 2021

#### 71111.05 - Fire Protection

##### Fire Area Walkdown and Inspection Sample (IP Section 03.01) (8 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

- (1) Fire Zone A-3(a); residual heat removal 'B' pump and heat exchanger rooms; elevation 707' - 781'; on April 13, 2021
- (2) Fire Zone FLEX equipment storage building on April 26, 2021
- (3) Fire Zone CB-1(f); control building general area; elevation 762'; on May 18, 2021
- (4) Fire Zone F-1(j,k,m,n,o,p); fuel handling building; elevation 737'; on May 20, 2021
- (5) Fire Zone T-1(b); condensate booster pump room; elevation 712'; on May 25, 2021
- (6) Fire Zone C-2; containment; elevation 803'; on May 26, 2021
- (7) Fire Zone radwaste floor drain and chemical waste area; elevation 737'; on June 29, 2021
- (8) Fire Zone A-2(c); low pressure core spray; elevation 702' - 712'; on April 22, 2021

#### 71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

##### Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during a maximum generation emergency event on June 10, 2021.

##### Licensed Operator Requalification Training/Examinations (IP Section 03.02) (1 Sample)

- (1) The inspectors observed and evaluated simulator performance on May 18, 2021.

### 71111.12 - Maintenance Effectiveness

#### Maintenance Effectiveness (IP Section 03.01) (2 Samples)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components remain capable of performing their intended function:

- (1) reactor core isolation cooling five card failure
- (2) drywell cooling heating ventilation and air conditioning system

### 71111.13 - Maintenance Risk Assessments and Emergent Work Control

#### Risk Assessment and Management Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed:

- (1) Work Order 5117981, "Division 1 4kV Undervoltage Relay Calibration"
- (2) Work Order 5114278, "Reactor Core Isolation Cooling Valve Operability Check"
- (3) Work Order 4906101, "Plant Process Computer Server Replacement"

### 71111.15 - Operability Determinations and Functionality Assessments

#### Operability Determination or Functionality Assessment (IP Section 03.01) (4 Samples)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

- (1) reserve auxiliary transformer static volt compensator on May 25, 2021
- (2) standby gas treatment shutdown safety water leaks on May 24, 2021
- (3) reactor core isolation cooling isolation valve blown control power fuse on March 23, 2021
- (4) drywell radiation monitor computer point failed low on June 17, 2021

### 71111.18 - Plant Modifications

#### Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

- (1) plant process computer server replacement

### 71111.19 - Post-Maintenance Testing

#### Post-Maintenance Test Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the following post-maintenance test activities to verify system operability and functionality:

- (1) Work Order 4964726-05, "Low Pressure Core Spray Pump Run"
- (2) Work Order 5017524, "Residual Heat Removal Pump 'A' Run Following Oil Change"
- (3) Work Order 1156377-02, "1G36F002A Stroke Following Actuator Repairs"
- (4) Work Order 4992375-06, "1SC01PC Post Maintenance Test"
- (5) Work Order 4992375-11, "Run Div III SX Pump for 2 hours Then Time Coast Down"

### 71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

#### Surveillance Tests (other) (IP Section 03.01) (1 Sample)

- (1) Work Order 5114278, "Reactor Core Isolation Cooling Valve Operability Check"

#### Inservice Testing (IP Section 03.01) (1 Sample)

- (1) Work Order 5136865, "Low Pressure Core Spray Pump and Water Leg Pump Operability Check"

#### FLEX Testing (IP Section 03.02) (1 Sample)

- (1) FLEX pump testing on April 26, 2021

### **OTHER ACTIVITIES – BASELINE**

#### 71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

#### MS06: Emergency AC Power Systems (IP Section 02.05) (1 Sample)

- (1) Unit 1 (April 1, 2020 through March 31, 2021)

#### MS07: High Pressure Injection Systems (IP Section 02.06) (1 Sample)

- (1) Unit 1 (April 1, 2020 through March 31, 2021)

#### MS08: Heat Removal Systems (IP Section 02.07) (1 Sample)

- (1) Unit 1 (April 1, 2020 through March 31, 2021)



71153 - Follow Up of Events and Notices of Enforcement Discretion

Event Follow up (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated grid disturbance and loss of south offsite electrical ring bus on April 2, 2021.

Event Report (IP Section 03.02) (1 Sample)

The inspectors evaluated the following licensee event reports (LERs):

- (1) LER 05000461/2020-001-00, Reportable Contraband Event (ADAMS Accession No. ML20083M365)

The inspectors reviewed the LER submittal. The previous LER submittal was reviewed in Inspection Report 05000461/2020403 (Non-Public) under Inspection Results Section 93812 and Inspection Report 05000461/2020404.

## INSPECTION RESULTS

Observation: Licensee Event Report (LER) 2020-001-00: Reportable Contraband Event Closure	71153
The inspectors identified no accuracy or completeness issues with LER 2020-001-00. The inspectors evaluated the corrective actions taken and planned document by corrective program item 4311763 as appropriate. No additional issues were identified by the inspectors.	
Observation: Electrical Grid Disturbance and Loss of South Offsite Electrical Ring Bus on April 2, 2021	71153
The inspectors evaluated grid disturbance and loss of south offsite electrical ring bus on April 2, 2021. The inspectors verified separate qualified sources were determined to remain available to the electrical safety buses and that no safety functions were degraded. The inspectors identified no issues with operator response or onsite facility performance. No actual or potential hazard to public health and safety, common defense and security, property, or the environment was identified.	

## EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On July 8, 2021, the inspectors presented the integrated inspection results to Ms. N. Plumey, Plant Manager, and other members of the licensee staff.

## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents	AR 4431699	Entered 4303.02 Abnormal Lake Level	06/26/2021
	Procedures	CPS 4303.02	Abnormal Lake Level	13a
71111.04	Procedures	CPS 3312.01E001	Residual Heat Removal Electrical Lineup	17
		CPS 3312.01V001	Residual Heat Removal Valve Lineup	17c
		CPS 3313.01	Low Pressure Core Spray	18
71111.05	Fire Plans	1893.04M340	762' Control: General Access Area Prefire Plan	6d
		1893.04M701	712' Turbine: Condensate Booster Pump Room Prefire Plan	6a
		CPS 1893.04M101	707' - 712' Auxiliary: LPCS Pump Room Prefire Plan	5a
		CPS 1893.04M240	803' Containment: Prefire Plan	5
		CPS 1893.04M410	737' Fuel: Grade Level Prefire Plan	4c
		CPS 1893.04M621	Radwaste Floor Drain and Chemical Waste Area Prefire Plan	5a
		CPS 1893.04M838	Flex Equipment Storage Building Prefire Plan	0
		CPS 1983.04M104	707' - 781' Auxiliary: RHR 'B' Pump and Heat Exchanger Room Prefire Plan	5b
71111.12	Corrective Action Documents	AR 4392177	Unexpected RCIC Response During 9030.01 C034/C035 Testing	12/26/2020
		AR 4416283	VP 'A' Chiller Operating Erratically	04/14/2021
71111.13	Work Orders	WO 4906101	PPC Server Refresh Install EC 627563	06/23/2021
		WO 5114278	OP 9054.02 RCIC Valve Operability	04/09/2021
		WO 5117981	Division 1 4kV Undervoltage Relay Calibration	0
71111.15	Corrective Action Documents	AR 4411055	1AP74E8C - F01 Blown Control Power Fuse on 1E51-F064	03/23/2021
		AR 4425025	0SX008 Leakage Observed During VG Loop Seal Fill	0
		AR 4425026	0SX009 Leakage Found During VG Loop Seal Fill	0
		AR 4425447	Low RAT SVC Ouput VARS 33.5 MVAR	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		AR 4429871	CM-BA905 Computer Point Failed Low	06/17/2021
71111.19	Work Orders	WO 1156377	1G36-F002A Very Slow to Stroke Closed	05/26/2021
		WO 4974726-05	LPCS Pump Run	0
		WO 4992375	1SX01PC Pull Entire Div 3 SX Pump Internals	0
		WO 4992375-11	Run Div III SX Pump for 2 hours Then Time Coast Down	0
		WO 5017524	Outboard Motor Bearing Oil Potentially Degraded	04/14/2021
71111.22	Work Orders	WO 5114278	9054.02A20 OP RCIC Valve Operability	04/09/2021
		WO 5136866	9052.01 LPCS Pump Operability	06/15/2021
71153	Procedures	OP-CL-108-107-1003	CPS Response to Grid Capacity Conditions	0