



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

September 13, 2019

Mr. Bryan C. Hanson
Senior VP, Exelon Generation Company, LLC
Exelon Generation Company, LLC
President and CNO, Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BYRON STATION—BIENNIAL PROBLEM IDENTIFICATION AND
RESOLUTION INSPECTION REPORT 05000454/2019010 AND
05000455/2019010

Dear Mr. Hanson:

On August 23, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed a problem identification and resolution inspection at your Byron Station, Units 1 and 2 and discussed the results of this inspection with Mr. M. Kanavos and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspection team reviewed the station's corrective action program and the station's implementation of the program to evaluate its effectiveness in identifying, prioritizing, evaluating, and correcting problems, and to confirm that the station was complying with NRC regulations and licensee standards for corrective action programs. Based on the samples reviewed, the team determined that your staff's performance in each of these areas adequately supported nuclear safety.

The team also evaluated the station's processes for use of industry and NRC operating experience information and the effectiveness of the station's audits and self-assessments. Based on the samples reviewed, the team determined that your staff's performance in each of these areas adequately supported nuclear safety.

Finally the team reviewed the station's programs to establish and maintain a safety-conscious work environment, and interviewed station personnel to evaluate the effectiveness of these programs. Based on the team's observations and the results of these interviews the team found no evidence of challenges to your organization's safety-conscious work environment. Your employees appeared willing to raise nuclear safety concerns through at least one of the several means available.

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."

Sincerely,

/RA/

Hironori Peterson, Chief
Branch 3
Division of Reactor Projects

Docket Nos. 05000454 and 05000455
License Nos. NPF-37 and NPF-66

Enclosure:
As stated

cc: Distribution via LISTSERV®

Letter to Bryan Hanson from Hironori Peterson dated September 13, 2019

SUBJECT: BYRON STATION—BIENNIAL PROBLEM IDENTIFICATION AND
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05000455/2019010

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

Docket Numbers: 05000454 and 05000455

License Numbers: NPF-37 and NPF-66

Report Numbers: 05000454/2019010 and 05000455/2019010

Enterprise Identifier: I-2019-010-0048

Licensee: Exelon Generation Company, LLC

Facility: Byron Station

Location: Byron, IL

Inspection Dates: August 05, 2019 to August 23, 2019

Inspectors: A. Anderson, Physical Security Inspector
C. Hunt, Resident Inspector
D. Merzke, Senior Reactor Operations Engineer
R. Ruiz, Project Engineer

Approved By: Hironori Peterson, Chief
Branch 3
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a biennial problem identification and resolution inspection at Byron 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

None.

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.

OTHER ACTIVITIES – BASELINE

71152B - Problem Identification and Resolution

Biennial Team Inspection (IP Section 02.04) (1 Sample)

- (1) The inspectors performed a biennial assessment of the licensee's corrective action program, use of operating experience, self-assessments and audits, and safety conscious work environment.
 - Corrective Action Program Effectiveness: The inspectors assessed the corrective action program's effectiveness in identifying, prioritizing, evaluating, and correcting problems.
 - Operating Experience, Self-Assessments and Audits: The inspectors assessed the effectiveness of the station's processes for use of operating experience, audits and self-assessments.
 - Safety Conscious Work Environment: The inspectors assessed the effectiveness of the station's programs to establish and maintain a safety-conscious work environment.

INSPECTION RESULTS

Assessment	71152B
<p><u>Corrective Action Program Effectiveness:</u> Based on the samples reviewed, the team determined that the licensee's performance in each of these areas adequately supported nuclear safety.</p> <ul style="list-style-type: none">• Problem Identification: Overall, the licensee was effective at identifying issues at a low threshold and was properly entering them into the Corrective Action Program (CAP) as required by Fleet procedures. The inspectors determined that the station was generally effective at identifying negative trends that could potentially impact nuclear safety. The inspectors also performed several plant walkdowns of various areas/systems important-to-safety, including security-related locations. For the areas inspected, the team did not identify any concerns in the area of problem identification.• Problem Prioritization and Evaluation: In-depth reviews of a risk-informed sampling of Action Requests (ARs), work orders (WOs), and cause evaluations were completed, including a 5-year review of issues associated with the Essential Service Water (SX)	

system. The inspectors concluded that the licensee generally appropriately prioritized and evaluated issues for resolution.

- **Corrective Actions:** The team concluded that the licensee was generally effective in developing Corrective Actions that were appropriately focused to correct the identified problem and correct conditions adverse to quality. Although no issues considered significant conditions adverse to quality occurred since the last biennial inspection, the team verified that licensee procedures require action be taken to address the root and contributing causes and to preclude repetition. Corrective actions were generally completed in a timely manner and in accordance with procedural requirements commensurate with the safety significance of the issue.

Operating Experience, Self-Assessments and Audits: Based on the samples reviewed, the team determined that the licensee's performance in these areas adequately supported nuclear safety.

Safety Conscious Work Environment: The team found no evidence of challenges to the licensee organization's safety-conscious work environment. Through interviews and field observations, the team determined that workers were willing to identify issues through any of the available means. The team observed various station meetings, including those in which new ARs were reviewed, and interviewed a representative cross-section of station personnel, both individually and in focus groups (of six to eight individuals per group). Additionally, the team assessed the overall health of the Employee Concerns Program. Specifically, the team interviewed the Employee Concerns Coordinator, reviewed recent case logs and case files, and considered statements received during interviews with station personnel. The inspectors found the Employee Concerns Program to be effectively implemented at Byron Station.

EXIT MEETINGS AND DEBRIEFS

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

- On August 23, 2019, the inspectors presented the biennial problem identification and resolution inspection results to Mr. M. Kanavos and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71152B	Corrective Action Documents		NOTE: This Documents Reviewed section is NOT an all-inclusive list of every inspection-related document reviewed by the inspectors. The documents listed below are those the inspectors considered critically reviewed in accordance with section 14.10 "Documents Reviewed" of NRC Inspection Manual Chapter 0611, "Power Reactor Inspection Reports" as having appropriate informational value to warrant preservation.	
		AR 02704898	Leak at Weld Defect on SX Drain Pipe	08/16/2018
		AR 02705998	EOC - Perform NDE on 2SX265A	08/18/2016
		AR 02706000	EOC - Perform NDE on 2SX275A	08/18/2016
		AR 02706001	EOC - Perform NDE on 1SX035	08/18/2016
		AR 02706004	EOC - Perform NDE on 1SX265A	08/18/2016
		AR 02739021	Green FIN/NCV: VIO of 10 CFR 71.5 and 49 CFR 171.1	11/09/2016
		AR 04034999	0B VC Chiller Surveillance Results Invalid	07/24/2017
		AR 04036541	Review of 10 CFR Part 21 Notification on Grayboot Connectors	07/28/2017
		AR 04039037	IA RCFC Failed to Start within 33 Seconds	08/04/2017
		AR 04049814	Unanalyzed Consequence from MSLB Outside Containment	09/07/2017
		AR 04054992	WGE - Security Improper Handling of Safeguards Information	10/10/2017
		AR 04057245	Green NCV: Calculated Armed Responder Timeline Longer Than Calculated Adversary	09/27/2017
		AR 04057249	Green NCV, Failure to Maintain Properly Equipped Armed Responders	09/27/2017
		AR 04060119	Green NCV: Failure to Promptly Identify Degraded RCFC Circuit	10/06/2017
		AR 04085610	Green NCV: Inadequate Blow Out Panel Design Control	12/19/2017
		AR 04085649	Green NCV: Inaccurate Analysis of Record	12/19/2017
		AR 04090149	Engineering Director Not Responsive to Operability Concern	01/04/2018
		AR 04090606	Byron NRC Emergency Preparedness Program Inspection	08/01/2018
		AR 04091472	CAPE - Byron Station Air Compressor Failure Trend	03/01/2018
		AR 04096766	DBAI NRC Identified Check Valve Testing on 1(2)RF026/027	01/24/2018

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		AR 04098736	NRC DBAI - IST Non-Compliance Issue	01/30/2018
		AR 04101416	DBAI No Docs to Support IA Regulator Setting for RF026/027	02/06/2018
		AR 04101772	NRC DBAI, EDG Steady State Lower Frequency Administrative Limit	02/07/2018
		AR 04123542	NOS ID: ACIT For CRE Procedure Closed to MREQ	04/05/2018
		AR 04134044	NRC ID Potential Trend with Test Equipment	05/03/2018
		AR 04136004	Green NCV: Check Valves Associated with AOV Containment Isolation Valves Not Tested	05/09/2018
		AR 04142370	Licensee Identified Green NCV: 10 CFR Part 50, Appx, Criterion V, "Instructions, Procedures, and Drawings - DO Pump Test Packages are Not Routed to the IST Coordinator	05/30/2018
		AR 04142617	Licensee Identified Green NCV: 10 CFR Part 50, Appx, Criterion V, "Instructions, Procedures, and Drawings-Acceptance Criteria Not Clearly Listed in DO Pump Procedures	05/30/2018
		AR 04169252	HURB - Security Rifle Unattended in Protective Area	09/01/2018
		AR 04177627	ECAPE - Incore Flux Mapping System Aggregate Impact	11/13/2018
		AR 04178368	U1 SI Pump Discharge Lines Require Venting	09/29/2018
		AR 04180628	Unexpected Rod Motion on Unit 1	10/05/2018
		AR 04182314	Unit 1 LEFM Trouble	10/11/2018
		AR 04184302	HURB - Security, Negligent Discharge at Security Firing Range	10/16/2018
		AR 04194784	HURB - Security Vehicle Contacted Guardrail in OCA	11/14/2018
		AR 04209128	CAPE - Unexpected MCR Alarms Due to Degraded Main Condenser Vacuum	02/15/2019
		AR 04228449	HURB - Fire Watch Turnover not Conducted	03/11/2019
		AR 04230553	Potential Inactive Leak on 2SX03B Line	03/18/2019
		AR 04233626	CAPE - Individual Received Unplanned Accumulated Dose Alarm While Performing Pre-Outage, At-Power Inspections in Containment	05/02/2019
		AR 04236182	NOS ID: Byron Fire and Rescue Department Concern with Large Fires Within the PA	04/04/2019
		AR 04249346	Potential Trend in Poor Radworker Practices	05/15/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		AR 04255164	Failed EP Exercise Objective B.3 OSC	06/07/2019
		AR 04255229	Failed EP Exercise Objective F.2 SCR	06/07/2019
		AR 04255246	Failed EP Exercise Objective D.1 TSC	06/07/2019
		AR 04255258	Failed EP Exercise Objective I.1 SCR	06/07/2019
		AR 04267883	HURB - Security Patrol Failed to Turn Over All Equipment	07/29/2019
		AR 04270200	2019 NRC PI&R: Question on WR Status IR 2704898	08/07/2019
		AR 04270693	System Health Walkdowns and Monitoring not Timely Documented	08/09/2019
		AR 04271155	WO Priorities	08/12/2019
		AR 4072073	CAPE - Trend in Wrong Train/Component Events During B2R20	11/07/2017
		AR 4092210	CAPE - Observed Instances of Inconsistent Standards During Maintenance On-The-Job Training (OJT) and Task Performance Evaluation (TPE)	01/10/2018
		AR 4153681	Root Cause - Loss of Bus 13 - SAT 242-2 Failure	08/14/2018
		AR 4154533	CAPE - Adverse Trend with ASME Performance Issues	08/10/2018
		AR 4157032	Emergency Preparedness Qualification Lapse	08/01/2018
		AR 4157112	Participation/Qualification Data Discrepancy	08/01/2018
		AR 4257706	WGE - EP PIM 2018-0234 EP CFAM PI Ranking Rejected by MRC	07/05/2019
		ARs Reviewed to Evaluate the Operating Experience Program	04050107, 04051104, 04052150, 04061107, 04096408, 04108230, 04123729, 04112536, 4137807, 04140999, 04143477, 04145359, 04207907, 04217069, 04252291, 04234259, 04234264, 04234269, 04234281, 04234286, 04234297, 04234303, 04234304, 04237715, 04245987, 04229147	
	Corrective Action Documents Resulting from Inspection	AR 04271850	OPEX Evaluation was Marked Incorrectly	08/14/2019
	Engineering Changes	EC 0000624019	Determine Interim IST Pump Testing Administrative Limits Considering EDG Lower Frequency Admin Limit	0
		EC 0000624027	1/2RF026/027 Actuator IA Regulator Setting Determination	0
	Miscellaneous	Meeting	Nuclear Safety Culture Review Meeting (NSCRM)	06/14/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		Summary		
		Meeting Summary	NSCRM Focused Meeting on Employee Engagement Survey Results	08/05/2019
		MRC Packages	Management Review Committee Agendas (Daily during Inspection)	08/05/2019 to 8/23/2019
		PIIM 2018-0145	Byron Station Organizational Development Plan	02/23/2018
		SOC Packages	Station Ownership Committee (SOC) Agendas (Daily during Inspection)	08/05/2019 to 08/23/2019
		Survey Results	2018 Employee Engagement Survey Results	0
	Procedures	1BOSR 3.2.8-610A	ESFAS Instrumentation Slave Relay Surveillance and Automatic Actuation Test (Train A Automatic Safety Injection - K610)	9
		1BOSR 3.6.3.RF1	Inservice Testing (IST) Requirements for 1RF026 and 1RF027 Accumulator Assembly	5
		EI-AA-101	Employee Concerns Program	11
		ER-AA-2003	System Performance Monitoring and Analysis	15
		ER-AA-3004	Transformer Post Trip Standardized Test	0
		PI-AA-115	Operating Experience Program	4
		PI-AA-115-1001	Processing of Level 1 OPEX Evaluations	2
		PI-AA-115-1002	Processing of Level 2 OPEX Evaluations	3
		PI-AA-115-1003	Processing of Level 3 OPEX Evaluations	5
		PI-AA-115-1004	Processing of NER and ICES Reports	6
		PI-AA-120	Issue Identification and Screening Process	8
		PI-AA-125	Corrective Action Program Procedure	6
		PI-AA-125-1003	Corrective Action Program Evaluation Manual	4
		RP-AA-602	Packaging of Radioactive Material Shipments	21
	Self-Assessments	AR 04092981	Performance Monitoring Self-Assessment	04/05/2019
		AR 04094391	Rad Hazard Assessment and Exposure Controls	07/19/2018
		AR 04094395	Pre-NRC Inspection Occupational ALARA Planning and Controls 71124.02 Assessment	07/26/2018
		AR 04095907	Determine the Effectiveness of Actions from CAPE 04072073	11/07/2018
		AR 04124747	Post-Accident Gaseous Effluent Monitoring (NUREG-0737)	05/16/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		AR 3976904	Emergency Preparedness Audit Report, NOSA-BYR 17-03, Nuclear Corporate Support	03/27/2017 to 03/31/2017
		AR 4113203	Emergency Preparedness Audit Report, NOSA-BYR 18-03, Byron Station	03/26/2018 to 04/06/2018
		AR 4227347	Emergency Preparedness Audit Report, NOSA-BYR 19-03, Byron Station	03/25/2019 to 04/05/2019
		NOSA-BYR-18-04	Chemistry, Radwaste, Effluent, and Environmental Monitoring Audit Report	07/03/2018
		NOSA-BYR-18-05	Byron Station Engineering Programs Audit	03/12/2018
		NOSA-BYR-19-04	Corrective Action Program Audit (AR 04224697)	03/01/2019
		NOVA-17-002	Nuclear Industry Evaluation Program (NIEP) Fleet Evaluation of Exelon Midwest; Quality Assurance / Nuclear Oversight	06/05/2017
	Work Orders	WO 01890187	1FW01196S - Oil Leakage From Snubber: EWP MM - Replace Snubber 1FW01196S	12/14/2017
		WO 04796372	1AF004A Porting IA When Valve is Closed for Surveillance	06/11/2018