S-99 Reports

In accordance with regulatory standard entitled S-99 Reporting Requirements for Operating Nuclear Power Plants, power reactors operating in Canada must issue formal reports to the Canadian Nuclear Safety Commission (CNSC) on events defined in the S-99 regulatory standard.

The following is a list of S-99 event reports that were generated for Pickering Nuclear operations in 2009, excluding those containing confidential or security-related information. Ontario Power Generation provides an update to this list on a quarterly basis.

Questions? For more information on the Event Reports listed, Event Reports from prior years or other reports on OPG's operations, contact *Jacquie Hoornweg, Director Nuclear Public Affairs* at 416-592-6806.

Pickering A

Event Number	S-99 Report Title
1 st Quarter	
P-2008-14778	Vacuum Building and Filtered Air Design System design conditions
P-2008-25250	Safety Problem Discovered: Programmatic Failure of the Space Allocation and Transient Material Process
P-2008-25481	RPR Non-Compliance: Radioactive Material Stored in Vacuum Building Basement without Proof of RHP Approval
P-2008-29539	System Unavailability: Spurious Signals on Two Boiler Room High Pressure Trip Channels
P-2008-30233	Pressure Boundary Degradation: Thinned Small Bore Elbow Detected During FAC Inspection
P-2008-30991	Late Licensing PM: Late Regulatory PM Deferral Pending Approval
P-2009-00011	Unit 1 Box Up Due to External Gamma Source During Slurry
P-2009-00152	Non-Compliance to License Condition: PNGSA Below Minimum Shift Complement [Due to illness Duty Shift Manager absent for approximately 30 minutes]
P-2009-00213	Declaration of Station Alert: HAZMAT Emergency Declared due to Suspected Hydrazine Excursion [Later determined not to have been a Hydrazine event]

Event Number	S-99 Report Title
P-2009-00947	Non-Compliance to Radiation Protection Requirements: PA Main Control Room was not Surveyed Within 24 Hours
P-2009-01122	Safety Problem Discovered: Improper Storage of Equipment in a Seismic Route
P-2009-01424	Non-Compliance to Radiation Protection Requirements: Employee Entered the Guard Shack at the A/B Gate in Browns [This event did not result in the release of any contamination]
P-2009-01543	Non - Compliance to Radiation Protection Requirements: EPD not Turned on for Radioactive Work
P-2009-01884	Non-Compliance With License Condition: Overpressure Protection Compromised on Resin Storage Tanks
P-2009-02138	Non-Compliance to License Condition: Portable Air Compressor Stored in Main Output Transformer Vault
P-2009-03153	Radiation Protection Requirement Non-Compliance: Hazard Not Posted When Unit 1 RAB PAGM Alarmed Due to Helium Tank Elevated Gamma Fields
P-2009-03189	System Not Available: Main Control Room/Control Equipment Room Heating Ventilation and Air Conditioning Unavailable in the Event of a Main Steam Line Break Due to Steam Door Left
P-2009-03330	Radiation Protection Regulation Non-Compliance: High Tritium Found in Unit #1 Air Lock 6
P-2009-03508	System Unavailability: ECI Recall Time Exceeded [The ECI System remained available however, an operational limit (recall time) was exceeded]
P-2009-04020	Pressure Boundary Non-Compliance: Tygon Hose and C-Clamps being Used to Vent Class 3 System Containing D2O. (Non Conformance with CSA N285.06)
P-2009-04080	Non Compliance with License Condition: Unapproved Modification: Unapproved Material in SDSE Fission Chambers [SDSE Fission Chambers remained available]
P-2009-04113	Non-Compliance to Radiation Protection Requirements: Less Than Adequate Supervision While Performing Radioactive Work
P-2009-05239	License Condition Non-Compliance: Magazine Relief Valve Not Tested According to Code Requirement [No risk associated with unavailability of this valve]
P-2009-05419	Non-Compliance with License Condition: Nonconforming Hose Installed at Resin Slurry Hopper Connection

Event Number	S-99 Report Title
P-2009-05502	Safety Problem Discovered: Inconsistency Between Negative Pressure Containment System/Filtered Air Discharge System (NPCS / FADS) Design Documentation and Post Accident Conditions [Later determined to not be an operational issue and low risk]
P-2009-05952	System Unavailability: EHPSW Impairment Unit 4 SDC Temp Control Valve Failed Open
P-2009-06121	Non-Compliance to License Condition: S-99 Date Missed for Relief Valve Recalibration
P-2009-06383	Non Compliance with License Condition: Unapproved Modification - No Shield Plugs Installed in EP11366 & 11083
P-2009-06532	Safety Problem Discovered: Temporary Air Supply Not Used for Work on Airlock Emergency Air Supply to Maintain Seismic Qualification [Event had low safety significance as the duration of the event was 15 minutes]
P-2009-06623	Equipment Misuse: Whole Body Monitor Found Damaged
P-2009-06647	System Unavailability: Emergency High Pressure Service Water (EHPSW) Does Not Meet Design Intent Due to Disabled Auto-Backwash of Strainers
P-2009-06652	Non-Compliance to License Condition: Late Preventative Maintenance for Relief Valves
P-2009-06835	Non Compliance with License Condition - National Fire Code Violation [Tent structure erected removed forthwith]
P-2009-06860	System Unavailability: Emergency Low Pressure Service Water Load (ELPSW) Shedding Impairment [System actually remained available]
P-2009-07143	System Unavailability: Load Shedding Impairment Discovered During Test P-072
P-2009-07574	System Unavailability: Emergency High Pressure Service Water (EHPSW) Does Not Meet Design Intent due to Failure of Temperature Control Valves (TCVs) to go to their Load Shedding Position During Testing [System actually remained available]
P-2009-07685	System Unavailability: ISTB Does not meet Design Intent Due to Planned Switching on 014-54130- BUEE
P-2009-07704	System Unavailability: ELPSW Unavailability Assigned Due to Failure of RCW Load Shedding [System actually remained available]
P-2009-07855	System Unavailability: Back Up Instrument Air Unavailability
P-2009-08106	Safety Problem Discovered: Pickering A, Shut Down Cooling Pump Availability Concerns

Event Number	S-99 Report Title
P-2009-08109	Non Compliance with Licensed Condition: Improper Storage of Items in Stairway in Contravention of National Fire Code [Employee lunch bags improperly stored]
P-2009-08234	System Unavailability: U4 Third Power Supply (TPS) Bypass Line Not Functioning Properly Resulting ISTB Unavailability
P-2009-08636	Reactor Trip: Unit 4 Low Power Manual Reactor Trip Due to Request from Hydro One to Isolate Current Transformer and Class IV Power [With the reactor operating at very low power level a manual trip of the reactor was performed as a prerequisite to the transformer isolation]
P-2009-08644	Safeguards: Loss of Power to 4-53300-BUC, Potential Impact on Safeguards
P-2009-08821	Non Compliance with National Fire Code: No Emergency Lighting in Upgrader Plant, Pickering (UPP) [Lighting was interrupted for 5 Minutes]
P-2009-09037	Health and Safety: PA System Speaker Broken
P-2009-09248	System Unavailability: Planned Loss of Power Supply to Interstation Transfer Bus (ISTB) BUEE due to Electrical Switching on Pickering B [This was a pre-planned activity]
2 nd Quarter	
P-2009-08543	Safety Problem Discovered: Unit 4 Heat Transport System (HTS) 4-33340-NV311 Stuck Open
P-2009-09017	License Condition Non-Compliance: Fire Hose Cabinet Access Blocked
P-2009-09382	System Unavailability: U4 SDC Loop Temp Element Off Scale High Resulting in Heat Transport System Does Not Meet Design Intent
P-2009-09617	Reactor Trip: Unit 4 Manual Reactor Trip Initiated Due to Steam Reject Valve (SRV) 4-36110-MV43 Failing Open
P-2009-09703	System Unavailability: Does Not Meet Design Intent (DNMDI) Impairment of Interstation Transfer Bus (ISTB) BUEE due to Planned Pickering B Class IV Auto Transfer on Unit 5
P-2009-09884	System Unavailability: Auxiliary Boiler Feed Pump Does Not Meet Design Intent
P-2009-10004	OP&P Non Compliance: Maintenance Perfumed on Steam Reject Valve Instrument Air Line Without Authorization
P-2009-10247	Unapproved Modification: 1-53300-MS8-C5 Instantaneous Setting Was Set Higher than Design Basis Value
P-2009-10816	License Non-Compliance: Pickering A Testing Program Not Aligned with Operating Policies and Principles (OP&Ps) [Integrity of the route test program was not adversely affected]

Event Number	S-99 Report Title
P-2009-10893	System Unavailability: Does Not Meet Design Intent Impairment of Interstation Transfer Bus (ISTB)
P-2009-11044	System Unavailability: Emergency Low Pressure Service Water Does not Meet Design Intent
P-2009-11246	Safety Problem Discovered: Potential Problem with Ability of Class IV Auto-Transfer to Change Over Supply from the GST to the SST with BUS-D
P-2009-11545	Non-Compliance with License Condition: National Fire Code Non-Compliance: Fire Water to Unit 1 Coffee Shop Valved Out
P-2009-11738	Safeguards: Loss of Lighting in Auxiliary Irradiated Fuel Bay
P-2009-11938	Reactor Trip: Unit 4 Shutdown Due to High Gas Levels in Oil in the Main Output Transformer (MOT) {later determined to be a manufacturing fault within the transformer]
P-2009-12858	Non-Compliance to License Condition: Premature Office Occupancy of Cafeteria Extension Trailer
P-2009-12979	Reactor Trip: Unit 4 Tripped Using SDSE and Placed in GSS to Facilitate Work on Liquid Zone Control Circuit [Manual trip is a procedural method of establishing the Guaranteed Shutdown State]
P-2009-12991	Missed Test: Late Licensed Test on breaker 4-54130-CB6C
P-2009-13400	Non-Compliance with License Condition: Pickering A Assessing. Relief Valve Last Tested in 1988
P-2009-14966	System Unavailability: Does Not Meet Design Intent Impairment of Moderator as a Heat Sink
P-2009-15030	Environmental Release: Daily Average Station Temperature Difference Limit Exceeded
P-2009-15046	Non-Compliance to Radiation Protection Requirements: Individual Observed Exiting UPP-A into the Unzoned Area Without Monitoring
P-2009-15346	Non-Compliance with License Condition: CS-Sulzer B Control Room, Paging Cannot be Heard due to Equipment Malfunction
P-2009-15496	Safety Problem Discovered: TOE Initiated - Unit 3 Helium Tank Installed Piping Section Not Seismically Qualified
P-2009-15552	Non Compliance with Licensed Condition: Ground Vegetation in High Hazard Areas in Contravention of National Fire Code
P-2009-15742	Non-Compliance with License Condition: Unapproved Modification for Double Gaskets on Main Volume Vacuum Pumps [Double gaskets were used without approval]

P-2009-15774	System Unavailability: Unit 4 Emergency Low Pressure Service Water Does Not Meet Design Intent Impairment [Emergency Low Pressure Service Water Does Not Meet Design Intent Impairment Due to Unavailability of Pumps 1 and 2]
P-2009-15918	System Unavailability: Does Not Meet Design Intent Impairment of Emergency Low Pressure Service Water System
3rd Quarter	
P-2009-16805	Non-Compliance with License Condition: Relief Valve 018-73440-RV2015 Removed From Service and Disposed without Performing Post-testing
P-2009-16831	Non-Compliance with License Condition: Unregistered Hose Assemblies Installed under Temporary Modification [At the time of installation the practice was acceptable]
P-2009-16833	Implementation of Contingency or Emergency Plan: Unit 1 Box-up on High Activity
P-2009-16888	Actuation of Containment System: Unit 4 Box-up on High Activity
P-2009-17475	Unapproved Modification: Over Current Protection Setting on Motor Starter (1-53300-MS8-C5) Changed Without Approval
P-2009-17599	Non-Compliance to Radiation Protection Requirements: Unposted Radiation Hazard
P-2009-17654	Safety Problem Discovered: Material Stored in the Pressure Relief Duct Without Being Properly Secured in Place [Material located in the furthest place, out of way of possible flowpath]
P-2009-18202	System Unavailability: Unit 3 Back-Up Instrument Air System Not Meeting Its Design Intent to Airlocks
P-2009-18421	Safety Problem Discovered: Findings from Independent Technical Panel (ITP) Review of Enhanced Neutron Overpower Protection (NOP) Methodology [No impact on the installed NOP set-points, no operability concerns for Pickering A]
P-2009-18623	Research Findings: Zircaloy Oxidation in Air
P-2009-19167	Non-Compliance with License Condition: National Fire Code Non-Compliance, Two Exit Signs Lighting Not Functioning
P-2009-19168	Non-Compliance to License Condition: National Fire Code Non-Compliance, No Light in Unit 2 Airlock 6
P-2009-20010	System Unavailability: U2/3 Emergency High Pressure Service Water (EHPSW) System

Non-Compliance to License Condition: Undocumented Settings Found on Shut Down System E Ground Fault Detectors
Safeguards: Loss of Lighting in Auxiliary Irradiated Fuel Bay
Non-Compliance with License Condition: Radiation Protection Requirements Non-Compliance: Food Consumed in Zone 2
Stack Monitor Unplanned Unavailability Exceeds Annual Limit
Health and Safety: Common Services Employee Arm Caught in Pickering-A Screenhouse Barscreen [No injury sustained and no Loss Time Accident]
Non-Compliance with License Condition: Discrete Particle Detected in Unzoned Area
Non Compliance with License Condition: National Fire Code Non Compliance, Exit Door Latched Shut
Site Emergency Paging System Partial Outage [During planned outage]
Safety Problem Discovered: Unit 4 Zone 2 Level Indication Irrational Signal
Safety Problem Discovered: Discrepancy Between SORO Predicted Maximum Channel Power Ratio (MCPR) and SORO Calculated MCPR After Fuelling [Evaluation concluded that functioning is within OP&P limits and no operability issues]
Missed Test: E-17 Test Not Completed by the Regulatory Due Date
System Unavailability: Does Not Meet Design Intent of Interstation Transfer Bus (ISTB) During P961 Planned Outage
Non-Compliance with License Condition: Procedural Non-Compliance for Removal of CEDA (Non- Standard Repair) Modifications
System Unavailability: Site Electrical System (SES) Does Not Meet Design Intent
Pressure Boundary Degradation: Emergency Storage System Piping Wall Thickness Below Code Limit
System Unavailability: Planned Inter Station Transfer Bus (ISTB) Unavailability due to SST Maintenance During P961 Planned Outage
Reactor Trip: Unit 4 Reactor Trip on Boiler Feedline Low Pressure (BFLP) at Low Power
System Unavailability: Pickering A Powerhouse Environmental Protection System Impairment Due to Failed Unit 3 Class II 48V Rectifier

P-2009-26879	System Unavailability: Powerhouse Environmental Protection (PEP) Unavailability due to Planned ISTB Switching during P961 Planned Outage
P-2009-27249	Research Findings: Bruce Power Radial DHC Growth Rate Results Above CSA N285.8 Upper Bound (external result)
P-2009-27312	Pressure Boundary Degradation: Relief Valve Seized Up with Crud Build Up
P-2009-27319	Missed Test: Predefines Not Completed by Regulatory Late Date
P-2009-27810	Non-Compliance with National Fire Code: Suppression and Detection Testing Not Performed on Re- locatable Structures
P-2009-28175	System Unavailability: Planned Pickering B SES Switching Causes Pickering A Impairment of ISTB during the P961 Planned Outage
P-2009-28536	System Unavailability: Unit 3 Powerhouse Environmental Protection unavailable due to a Planned Switching on the ISTB during P961 Outage
P-2009-28715	System Unavailability: ISTB 068-54130-BUFF Unavailable From Credited Supply
P-2009-28744	System Unavailability: Planned Electrical Switching on Unit 6 Causes Unavailability of ISTB
P-2009-29221	System Unavailability: Pickering A ISTB Planned Unavailability During P961 Planned Outage for 23 Minutes
P-2009-30203	Pressure Boundary Degradation: Fire Water Header Break South of Unit 2
P-2009-30300	Non Compliance with License Condition: Pickering A ANO Below Minimum Complement for 1 h 23 min
P-2009-30328	Non Compliance with License Condition: RPR Non-Compliance Unit 4 Access Control Gate Removed Without SM Approval During Outage
P-2009-30461	Unapproved Modification: Pickering A Operator Training Facility Trailer PA Speaker Was Found with Wires Cut

<u>Pickering B</u>

Event Number	S-99 Report Title
1 st Quarter	
P-2008-16906	Non-Compliance to Radiation Protection Requirements: Worker Found without proper RPE in Rubber Area

Event Number	S-99 Report Title
P-2008-25394	Safety Problem Discovered: Programmatic Failure of the Space Allocation and Transient Material Process
P-2009-00578	Non-Compliance to Radiation Protection Requirements: Unconditional Transfer Permit not Verified
P-2009-01288	Non-Compliance to Design Documents: 5/6/7/8-33320-TK1 Incorrect Tank Configuration
P-2009-02532	License Non-Compliance: OP&P Non Compliance Maintenance on ECI Channel Without Rejection
P-2009-02651	Non Compliance With License Condition: Regulatory Standard S-210 Issues
P-2009-03257	Failure to Comply with License Condition: Whole Body Monitor Damaged
P-2009-03944	License Non-Compliance: Falsification of Training Record by Contractor Staff for two Direct Reports [Contractor supervisor completed two computer based training sessions for contractor staff]
P-2009-04088	Non-Compliance to License Condition: Fire Equipment Access Blocked - (Chair and portable white board in front of fire extinguisher)
P-2009-05339	Safety Problem Discovered: Seismic Route Non Compliance (Material left on seismic route)
P-2009-05386	Failure to Comply With License Condition: Fire System 5 Year Inspection Past Late Date
P-2009-05499	Safety Problem Discovered: Inconsistency Between Negative Pressure Containment System/Filtered Air Discharge System (NPCS / FADS) Design Documentation and Post Accident Conditions [Later determined to not be an operational issue and low risk]
P-2009-05516	Safety Problem Discovered: Emergency Back-Up Air Supply Bottle Seismic Restraints Loose
P-2009-05519	Missed Test: Late Licensed Test on Airlocks
P-2009-05993	Non-Compliance to License Condition: Unit 7 Outage Fire Preventative Maintenance Task Beyond Late Date without Deferral
P-2009-06030	Non-Compliance to Radiation Protection Requirements: Radiation Protection Hazard Barrier Moved Without Proper Approval.
P-2009-06234	Pressure Boundary Degradation: 8-35390-STR3 Outlet Flex Hose Developed Leak
P-2009-06321	RPR Non-Compliance: Incorrect Dosimetry Worn While Entering Unit 5 East Vault
P-2009-06431	Non-Compliance with Licensee Produced Documents: TLD Left in Plastic Suit and Failed to Monitor at the Access Desk

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Reactor Trip: Unit 7 SDS1 and SDS2 Actuation
License Condition: Non Compliance with Fire Code - Scaffold Hinders Access to Pickering B
Screenhouse
License Condition: Non Compliance with Fire Code - Emergency Lighting Not Available in EPS
Building
Missed Test: Late Licensed Test on Unit 5 (C-25)
Non Compliance with License Condition: Relief Valve Missed the S-99 Test Date
Environmental Release: Daily Average Station Differential Temperature Limit Exceeded 11 deg C
Non Compliance with Nuclear Safety Control Act & Regulations: Unposted Radiation Hazard
License Non-Compliance: OP&P Violation: Unauthorized Work Performed on SDS2 Equipment
Non Compliance with License Condition - National Fire Code Violation: Furniture and Cardboard Boxes
Stored inappropriately
Non Compliance with Licensed Condition: Ground Vegetation in High Hazard Areas in Contravention of
National Fire Code
External Event: Reactor Power Reduced Due to Algae Run
Reduction Below Defined Specifications: Heat Transport Control Valve Failed in Closed Position
[Reduced System Effectiveness: 8-33332-CV113 Failed Closed]
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Reduction Below Defined Specifications: Turbine Trip Impaired [Not Safety Significant]
Non-Compliance to License Condition: Relief Valve Installed in Incorrect Position
Safety Problem Discovered: Findings from Independent Technical Panel (ITP) Review of Enhanced
Neutron Overpower Protection (NOP) Methodology [No impact on the installed NOP set-points, no
operability concerns for Pickering B]
Non-Compliance with Licensee Produced Documents: Non Compliance with Radiation Protection
Requirements, Orange 1 Qualified Employee Escorted a non-Nuclear Energy Worker (NEW) Contractor
into Zone 2

P-2009-18637	Research Findings: Zircaloy Oxidation in Air
P-2009-18785	Research Findings: Heat Transport System Ageing Causing Higher Fuel Sheath Temperature than
	Stated in the Safety Report [Fuel may dry out earlier however no fuel sheath failure]
P-2009-20818	External Event: Unit 8 Shut Down as per Operating Manual Due to Debris Run
P-2009-21347	System Unavailability: SES Unavailability (Short duration)
P-2009-21667	Safety Problem Discovered: Crane Located Near the Emergency Power Generator (EPG) Fuel Tanks Not Seismically Secured
P-2009-21777	System Unavailability: Level 2 Impairment of Emergency Coolant Injection (ECI)
P-2009-21901	Safety Problem Discovered: Crane Located Near the Emergency Power Generator (EPG) Fuel Tanks
P-2009-22334	Non-Compliance to License Condition: Newman-Hattersley Rationalized Design Specification
	Reconciliation not per Code
4 th Quarter	
P-2009-23368	Safeguards: Loss of Lighting in Irradiated Fuel Bay-B [with perimeter lights on but less than 25% of lighting available]
P-2009-23524	Non-Compliance with Nuclear Safety and Control Act and or Regulation: Individual Entered U7 Reactor
	Building with Improper RPPE
P-2009-24312	Unit 5 Auxiliary Boiler Feed-Pump Unavailable Due to Unplanned Maintenance
P-2009-24553	System Unavailability: Single Unit Site Electrical System Configuration
P-2009-25147	Non-Compliance with Licensee Produced Documents: Unposted Hazard in Unit 6 Airlock 5
P-2009-25347	Safety Problem Discovered: Craning in Seismic Area Without the Minimum Horizontal Offset
P-2009-26437	System Unavailability: Unit 6 Emergency Water System Recovery Sump Level Indication Unavailability
P-2009-26677	System Unavailability: Planned Inter Station Transfer Bus (ISTB) Unavailable for Approximately 5
	Minutes for Electrical Switching during P961 Outage
P-2009-26739	Non-Compliance with Licensee Produced Documents: Unapproved Exit/Entry Point From Zone 3 to
	Unzoned Area
P-2009-26764	System Unavailability: Level 2 Impairment of SDS2 for Approximately 37 sec During Performance of
	Test S2-01

P-2009-27120	Non-Compliance to License Condition: Guaranteed Shut Down States Not Per OP&P 63.18
	[Non safety significant non-compliance]
P-2009-27364	Research Findings: Bruce Power: Radial DHC Growth Rate Results Above CSA N285.8 Upper Bound
	(external result)
P-2009-27476	Non-Compliance to National Fire Code: Fire Door Blocked Open as part of Safe Work Area
P-2009-27546	Non-Compliance to National Fire Code: Access To Fire Extinguisher Station Blocked by Scaffolding
P-2009-27813	Non-Compliance to National Fire Code: Suppression and Detection Testing Not Performed on Re-
	locatable Structures
P-2009-28758	System Unavailability: Level 2 Impairment Declared on Negative Pressure Containment System for
	4.23 Minutes
P-2009-29095	System Unavailability: Delay in Normal Process of Unboxing Due to 7-73130-MDP502 not Opening
	Fully
P-2009-29289	Non-Compliance with Licensee Produced Documents: Worker Found in Rubber Area Without Proper
	RPPE
P-2009-30244	System Unavailability: Level 2 Impairment of SDS-2 During Channel G Rejection
P-2009-30610	System Unavailability: Level 2 Impairment of SDS 2 System During 34710-TK5 Injection Line Back-
	Flush, for Approximately 4 Seconds
P-2009-30629	System Unavailability: Unit 8 Level 2 Impairment of Negative Pressure Containment due to Failure of
	Motorized Damper 603