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Ms. Cynthia Pederson, Director Division of Nuclear Material Safety U. S. Nuclear Regulatory Commission Region III 801 Warrenville Road Lisle, Illinois 60532-4351

Portsmouth Gaseous Diffusion Plant (PORTS)

Docket No. 70-7002

Portsmouth Nuclear Criticality Safety Program - Quarterly Status Report

Dear Ms. Pederson:

Enclosure 1 is the quarterly status report of the Portsmouth NCS Program Corrective Action Plan (CAP) for the period April 28 1998, through July 27, 1998 (i.e., the cut-off date for this report). Enclosure 2 to this submittal is a revised list of prioritized NCSA/Es. This list was originally provided to NRC on December 22, 1997 (see USEC letter GDP-97-0217). This revision reflects that two (2) Priority 2 NCSA/Es and five (5) Priority 3 NCSA/Es have been upgraded to Priority 1. Also, four (4) new NCSA/Es have been added to the Priority 1 list. In addition, six (6) Priority 1 NCSA/Es for the X-705 facility were changed to Priority 2. These changes are reflected by margin bars on the right-hand side of the document.

If you have questions regarding this submittal, please contact Dave Waters at (740) 897-2710.

Sincerely,

CC:

Steven A. Toelle

Nuclear Regulatory Assurance and Policy Manager

Enclosures: As stated

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### July 1998 Quarterly Status Report of the PORTS Nuclear Criticality Safety Program Corrective Action Plan

### I. Purpose

To convey the status of the tasks in the Nuclear Criticality Safety (NCS) Corrective Action Plan (CAP).

### II. Scope

This report documents the results of a review of the NCS CAP. This review evaluated the adequacy and effectiveness of the Plan and the products of the Plan with respect to scope, implementation, prioritization, and scheduling. Also considered and incorporated are the findings from Safety, Safeguards and Quality (SS&Q) assessments of the CAP (refer to Task 17 of the Plan). Section IV "Details," describes the subject, status and the results of USEC's review.

### III. Executive Summary

Seven (7) tasks in the NCS CAP were scheduled to be completed during this reporting period (i.e., Tasks 8, 10, 14, 19, 20, 22, and 24). These tasks were completed on schedule. Additionally, USEC completed tasks 23 and 26. A total of eighteen (18) have been completed, as scheduled, and eight (8) tasks remain to be completed. Task 3, "NCSA/E Upgrade Project," is currently behind schedule due to a previous lack of qualified NCS Engineers. However, significant progress was made in other areas of the NCS CAP especially the reduction of NCS violations (e.g., the number of reportable NCS violations has decreased from an average of about 30 notifications during February and March 1998, to 7 notifications during May and June 1998). As discussed under task 3, additional resources have been applied to recover the schedule to meet the committed due date (e.g., a full complement of NCS Engineers and teams are now available). All other Tasks in the NCS CAP are on schedule.

### IV. Details

The following information is grouped according to the tasks listed on Table 2 of the NCS CAP, Revision 3. The cut-off date for this report is July 27, 1998.

Task 1 Facility Review of Nuclear Criticality Safety
Assessments/Evaluations (NCSA/E)

Target Date: 12/24/97

Complete.

Task 2 Review of NCSA/Es Regarding Qualifications

Target Date: 4/30/98

Complete.

Task 3 NCSA/Es Upgrade Project

Target Date:

Priority 1, 12/31/98 Priority 2, 6/22/99 Priority 3, 5/31/00

Behind schedule: The NCSA/E Upgrade Project remains behind schedule, although progress in regaining the schedule has been made. Of the fifty-six (56) Priority i NCSA/Es, five (5) have been approved and implemented. An additional eighteen (18) NCSA/Es have completed peer review. Recent improvements in the NCSA/E preparation process include:

- Four additional NCS engineers have been added as group leaders. This raised the number of working groups from six to ten.
- Barriers to NCSA/E milestones are discussed in the morning management meeting. This has succeeded in removing many of the roadblocks to completion of individual meetings.
- The review and approval process for the flow-down of requirements from revised NCSA/Es into implementing procedures has been changed so revised NCSA/Es and related procedures are reviewed by the Plant Operations Review Committee at the same time. This is expected to make the overall process, including training, more effective.
- Additional changes to the project are also being pursued to recover the schedule.

Task 4 Enhance NCSA/E Training (Interim Process) Target Date: 2/28/98

Complete.

Task 5 SS&Q Review of Implementation

Target Date: Priority 1, 2/15/99 Priority 2, 8/15/99 Priority 3, 7/15/00

On-going: Of the five (5) Priority 1 NCSA/Es that have been completed and implemented, one (1) NCSA/E has been walked down and found to be fully and correctly implemented. One is near completion and three are in the process of being walked-down.

Task 6 Complete Comprehensive Root Cause Analysis

Target Date: 2/28/98

Complete.

Task 7 Compare Applicable Industry Standards

Target Date: 1/31/98

Complete.

Task 8 Vertical Slice Review

Target Date: 5/31/93

Complete: The vertical slice review was completed on May 29, 1998. Recommendations in the report affecting NCS have been reviewed and are being appropriately incorporated into NCS program improvements.

Task 9 Continuous Improvement Program

Target Date: 1/31/98

Complete. The lessons learned program is ongoing.

Task 10 Personnel Qualification Verification

Target Date: 7/27/98

Complete. The training and qualification program for the NCS organization was reevaluated and upgraded. As part of this upgrade, certain NCS-related procedures were revised and the NCS Engineer Training Program was revised using the systems Approach to Training (SAT).

Task 11 Octside/Independent Assessments

Target Date: 4/30/98

Complete.

## Task 12 Policy/Procedure Revision and Training

Target Date: 12/31/98

Or schedule: Seven procedures have been approved and implemented, three (3) of these within the past quarter.

## Task 13 Revise Training Program for Site Personnel

Target Date: 4/30/98

(Subtask 13.5)

Complete.

## Task 14 Corrective Action Program Enhancements

Target Date: 6/30/98

Complete: Enhancements to the corrective action program were identified and incorporated into implementing procedures. Additional actions included upgrading the charter of the Corrective Action Review Board, establishing and communicating a higher level of management expectations, and providing additional training to key personnel in areas such as event investigation.

# Task 15 Configuration Management Program Enhancements

Target Date: 2/28/98

Ennancemen

Complete.

## Task 16 Revise Assessment Programs

Target Date: 10/30/98

On schedule. The SS&Q Quality Systems Group has the lead for revising the plant's assessment processes. Actions include:

- Revisions to the Management-By-Walking-Around and Independent Assessments processes are completed and implemented.
- The Organizational self-assessment program procedure revision is in the review process. This procedure also includes the line organization NCS annual assessment of fissile material operation.
- Revisions to the Management Self-assessment program are being evaluated.

# Task 17 Oversight of Plan Implementation

Target Date: 4/30/99

(Bi-monthly)

On schedule: The observations in the latest available SS&Q bimonthly assessment, dated May 29, 1998, of the activities in the NCS Corrective Action Plan ranged from excellent to a need to focus on compliance. Where appropriate, the results were considered as input to the discussions of specific tasks in this report.

Task 18 Evaluation and Feedback

Target Date: Quarterly starting on 1/31/98

On schedule: The results of this evaluation are included, as applicable, into the specific various tasks of this CAP.

Task 19 Evaluate Continued Use of Murder Board

Target Date: Not before 5/31/98

Complete: After careful consideration, the Murder Board was discontinued because the changes to the NCS subcommittee of the PORC are sufficient to effectively and appropriately ensure NCSA/Es are properly developed.

Activity D.7 Response to Anomalous NCS Conditions

Target Date: 2/11/98

Complete.

Activity D.8 NCS Oversight on the Operating Floors

Target Date: 2/2/98

Complete. Further discussion of this task is provided under task 20.

Task 20 NCS Field Operational Assistants (FOA)

Target Date: 6/15/98

Complete: FOAs were assigned to provide on-shift, field support to Operations regarding nuclear criticality safety concerns. However, this interim measure has fulfilled its purpose since Operations personnel have an increased awareness of NCS requirements. Therefore, this position is being eliminated.

Task 21 Fissile Material Operation (FMO) Identification Target Date: 10/23/98

On schedule: Implementing procedures are being prepared.

Target Date: 6/15/98

Target Date: N/A

Target Date: 5/11/98

Target Date: 11/30/98

Target Date: N/A

## Task 22 Compare SAR Chapter 5.2 to Applicable Industry Standards and the NCS program

Complete: SAR chapter 5.2, Nuclear Criticality Safety, was compared to industry standards and the NCS program. Discrepancies were identified and documented in a problem report. The problem report and list of discrepancies were forwarded for correction as part of Task 12, Policy/Procedure Revision and Training, using the NCS lessons learned procedure.

### Task 23 NCS Short-Term Corrective Actions

Complete: The NCS short-term corrective actions were initiated to focus on recent and current problems in an effort to stop violations of NCS controls. These short-term efforts, along with the effect of increased attention on other management controls, have resulted in a decrease in NRC event notifications.

### Task 24 PEH Deposit Surveillance Tracking

Complete: Procedure XP2-CO-CM1700, PEH Tracking, was approved and implemented on May 11, 1998.

## Task 25 Compliance Plan Review

On schedule: USEC letter GDP-98-2032, dated July 8, 1998, describes actions being taken to determine the accuracy of completion of Compliance Plan actions. Task 25 will be coordinated with and, if necessary, revised to be consistent with the actions described in USEC letter GDP-98-2032.

#### Task 26 NCSA/E Calculation Review

Complete: This is a new task that is reflected in Revision 3 to the NCS CAP. Calculations used in previously approved NCSA/Es were reviewed by qualified personnel to determine technical adequacy. No safety significant errors were found. Note: This task was completed before a target date was established.

ENCLOSURE 2
LIST OF CURRENT NCSAs

PRIORITY	NCSANBR	SUBJECT
1	0326_013.A06	Cascade Operations in the X-326 Building
1	0326_014.0C1	Operation of Seal Exhaust Stations with the Kinney Vacuum Pump Model KT-170LP in the X-326 Facility
1	0326_015.A03	Extended-Range Product (ERP) Withdrawal Station
1	0326_024.A04	Feeding of 5-inch, 8-inch and 12-inch Cyls. in the X-326 Product Withdrawal Area
1	0326_028.A00	Handling and Storage of Seals with Unknown Enrichment in X-326
1	0330_004.A03	Cascade Operations in the X-330 Building
1	0330_005.A00	X-330 Area 2 Seal Exhaust
1	0330_006.A01	X-330 Area 3 Seal Exhaust and Wet Air Evacuation
1	0330_007.A01	Product Withdrawal at the Tails Withdrawal Station
1	0330_013.A00	Long Term Storage of PEH Converter in X-330
1	0353_015.A03	Cascade Operations in the X-333 Building
1	0333_016.A01	X-333 Area 1 Seal Exhaust and Wet Air Evacuation
1	0333_017.A01	Low Assay Withdrawal (LAW) Station
1	0342A001.901	General Handling, Weighing, & Storage
1	0342A002.A01	Autoclave Operation
1	0342A004.A01	Oil Interceptor
1	0342A005.001	Sump
1	0343_001.001	General Handling, Weighing, & Storage
1	0343_002.A02	Autoclave Operation
1	0343_003.101	Oil Interceptors
1	0343_005.A02	Waste Streams
1	0344A001.A02	Autoclave Operation
1	0344A002.A01	Gulper System
1	0344A003.A00	X-344A Scale Pits and Sumps
1	0344A011.A00	Technetium (Tc) Trap in Autoclave
1	0705_009.A00	Seal Dismantling Room

PRIORITY	NCSANBR	SUBJECT
1	0705_012.A02	Small Parts Handtable Operations
1	0705_015.A09	Waste Water Treatment (Microfiltration System)
1	0705_025.A00	Nitrous Oxide (NOx) Scrubber System
1	0705_031.A00	Equipment Disassembly in the North Teardown Area
1	0705_033.1C4	South Annex Operations - Cascade Equipment
1	0705_034.A02	Spray Booth Operations
1	0705_041.A00	C-Area Material Handling & Storage
1	0705_042.A00	Small Equipment Tear-Down ("Blue Room")
1	0705_064.A00	Seal Can Handling and Storage in X-705
1	0705_132.A01	Replacing 8-and 12-inch HEU Cylinder Valves and Clearing 5-Inch Plugged Cylinder Valves
1	0710_009.A00	Storage Requirements for Fissile Material Transfer (Uranium Chain o Custody) Room
1	0710_026.A00	Sampling, Transporting, and Handling in X-710
1	PLANT004.A01	Storing and Handling of Large Cylinders of Uranium Material
1	PLANT006.A04	General Use of Small Diameter Containers for Storing High Enriched Material
1	PLANT018.A02	Dry Active Waste (Contaminated Burnables) in Waste Generation Areas and in Interim Storage
1	PLANT029.A00	Cascade Datum Systems
1	PLANT030.A02	Evacuation Booster Stations
1	PLANT033.A01	Surge Drums
1	PLANT038.A09	Inter-Building Tie Lines
1	PLANT043.A00	Fissile Material Transport
1	PLANT049.0C1	Always-Safe Portable Small UF6 Release Gulpers
1	PLANT054.A00	Lube Oil System
1	PLANT055.A00	Laundry
1	PLANT062.A00	Cascade Maintenance
1	PLANT076.A00	340 Complex Oil Interceptors, Scale Pits, & Sumps
1	PLANT079.A01	Opening Equipment containing Greater than A Safe Mass of Uranium Bearing Material
1	PLANT080.A00	Use, Handling and Storage of Autoclave Filter Units

PRIORITY	NCSANBR	SUBJECT	
1	PLANT082.A00	340 Complex Waste Streams	
1	PLANT085.A00	X-340 Complex Autoclave Operation	
1	PLANT086.A00	340 Complex Small Cylinders & Sample Containers	

TOTAL PRIORITY: 56

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PRIORITY	NCSANBR	SUBJECT
2	0326_022.101	X-326 Use of Portable HEPA Ventilation Units for Specific Activities
2	0330_003.101	Storage and Handling of Seals in X-330
2	0342A006.A02	Waste Streams
2	0343_008.001	Disposal of Pigtails, Manifolds, Cylinder Safety Valves, and Other Used Autoclave Components
2	0344A006.A03	Sample Cylinder Handling and Storage
2	0344A007.A04	Waste Streams
2	0344A010.0C1	Disposal of Pigtails, Manifolds, and Cylinder Safety Valves, and Othe Used AutoclaveComponents
2	0705_002.A02	2.5-Ton, 10-Ton, and 14-Ton Cylinder Cleaning
2	0705_010.101	Small Parts Glass Bead Blaster
2	0705_018.A03	8- εnd 12-inch Cylinder Cleaning
2	0705_024.0C5	Calciners, Solution Recovery
2	0705_038.A01	Truck Alley Cleaning
2	0705_039.A02	Oil and Grease Removal System
2	0705_082.A00	"A", "B", "C" Loop Pre-Evaporator Systems
2	0705_086.A00	"A", "B", and "C" Loop Post Evaporator Systems
2	0710_004.101	Gulpers for Mass Spectrometers
2	0710_006.A01	Uranium Sampling Laboratory (Implemented)
2	0710_008.A01	UF6 Isotopic Standards Preparation Laboratory
2	0710_011.A00	Process Spectrometry Laboratory
2	0710_012.A01	UraniumAnalysis Laboratory
2	0710_020.A00	Process Chemistry Laboratory

PRIORITY	NCSANBR	SUBJECT
2	0710_021.A00	Process Services Laboratory
2	0760_003.A01	Sample Buggy Repair
2	PLANT011.001	Use of Portable HEPA Ventilation Units for Specific Maintenance
2	PLANT012.A01	Favorable Geometry Vacuum Cleaner
2	PLANT013.A00	Batching Solutions and Solids
2	PLANT022.A00	Sample Cylinder Handling and Storage
2	PLANT025.A01	General Use of Small Diameter Containers for Storing up to 10% Enriched Material
2	PLANT031.A02	Use of Portable Infrared Analyzers (PIRA Buggies, FTIRs, etc.)
2	PLANT044.A00	Cold Recovery - Cold Traps
2	PLANT048.A03	Contaminated Metal
2	PLANT050.A00	Use, Handling, and Storage of Fixed HEPA Filters and Prefilters
2	PLANT051.A00	Cold Recovery Chemical Traps
2	PLANT052.A00	Cold Recovery - Holding Drums
2	PLANT053.A01	Uranium Analysis and Sampling
2	PLANT057.001	Use of Gas Sampling Cart
2	PLANT060.A02	Cylinder Valve Replacement
2	PLANT063.A00	Building Decontamination Activities
2	PLANT064.A00	Handling and Storage of Seals in X-326, X-330, X-333
2	PLANT065.A00	Use of Limited-Safe Geometry Vacuum Cleaners
2	PLANT068.A00	Negative Air Machine (NAM)
2	PLANT069.A00	Test Buggies
2	PLANT078.A00	Use of Ledoux 1S Cylinders at PORTS

TOTAL PRIORITY: 43 PRICOUNT

PRIORITY	NCSANBR	SUBJECT
3	0326_001.A02	Nuclear Criticality Safety of Shutdown and Standby X-326 Cells
3	0326_016.A00	Operating Floor Freon Degrader

PRIORITY	NCSANBR	SUBJECT
3	0326_027.A00	Operation of the X-326 NDA Laboratory
3	0330_009.001	Flushing/Cleaning of 1/2" Vented Cavity Pipes and Compressor "B' Seal Cavities, X-330
3	0333_007.A01	1000 CFM Negative Air Machine
3	0333_018.001	Freezer/Sublimer
3	0333_022.A00	Flushing/Cleaning of Vented Cavity Pipes and Compressor "B" Sea Cavities
3	0333_023.A01	Long Term Storage of 33-8-6 Stage 7 PEH Compressor
3	0344A004.A00	Evacuation System and Cold Traps
3	0344A005.A02	X344A Small Diameter Container Storage
3	0700_001.001	Fissile Material at The Radiation Instrument Calibration Facility.
3	0700_002.A01	Heavy Metals Siudge Storage
3	0700_004.A00	X-700 Converter Disassembly and Repair Area
3	0700_005.A00	Glass Bead Blasting
3	0700_006.A00	Biodenitrification (Pilot Plant and New Plant)
3	0700_007.A00	Cleaning Tank #3/ Converter Flushing Station
3	0700_016.A01	Uranium Bearing Materials Storage Area Between Columns D10 and D12
3	0700_017.A00	RCRA 90 Day Storage Area Bounded by Columns E2, E3, F2, and F
3	0700_018.A00	X-700 Large Sandblasting Operation
3	0700_019.A00	Routine Operations in x-700 Cleaning Tanks 1, 2, 4, 5
3	0700_020.A00	Operation of the X-700 Chemical Tanks 1, 2, 4, and 5
3	0705_004.A01	5-Inch Cylinder Cleaning
3	0705_005.A00	Small Cylinder Rinse Pit
3	0705_011.A02	Small Parts Pit
3	0705_014.A01	Leaching/Complexing Handtable
3	0705_020.A00	Flocculation & Filtration of Solutions from Leaching Operations
3	0705_021.A01	B-Area Batching Handtable Operations
3	0705_022.A01	B-38, B-1, and Dissolver Solution Storages
3	0705_023.A00	Operation of the "A," "B," and "C" Loop Extractor/Stripper Systems

PRIORITY	NCSANBR	SUBJECT
3	0705_027.A03	Heavy Metals Precipitation
3	0705_028.A00	Technetium Ion Exchange
3	0705_030.Au0	Recovery Elevator
3	0705_038.A85	Tunnel Storage
3	0705_037.A00	Ground Water Sumps
3	0705_040.A00	Overhead Storage
3	0705_043.A00	Elevator Tunnel
3	0705_044.001	Maintenance Shop
3	0705_050.A00	X-705 Process Laboratory
3	0705_051.A01	Solution Preparation
3	0705_055.A00	Facility Drains
3	0705_071.001	2.5-ton, 10-ton, and 14-ton Cylinder Drying
3	0705_072.A00	Inspection and Testing of UF6 Cylinders
3	0705_073.001	Genie Model AWP30 Manlift
3	0705_075.A00	F- Area Fissile Material Handling and Storage
3	0705_076.A00	Inadvertent Containers
3	0705_083.A01	"A", "B", and "C" Loop Concentrate Storage and Metering System
3	0705_084.A00	"A" and "B" Loop Raffinate Storage and Recycle System
3	0705_085.A00	"A", "B," "C" Loop T-Water Storages
3	0705_099.A01	Post EvaporatorSpray Condenser and Sample Condenser System
3	0705_100.A02	Pre-Evaporator Spray Condenser and Sample Condenser Systems
3	0705_102.A00	B Area Condensate Drain System
3	0705_103.A00	Process Vent System
3	0705_105.A01	Cylinder Cleaning Gulper System
3	0705_107.A00	2.5-ton, 10-ton, and 14-ton Cylinder Receiving & Storage
3	0705_108.001	SES (Solution Enrichment System) 2 (X-705)
3	0705_110.A01	Used Microfilters Removal and Storage

PRIORITY	NCSANBR	SUBJECT
3	0705_111.A01	Buffing Booth
3	0705_114.A00	Facilities Utilities/Services - Process Steam
3	0705_122.A02	Blending Cylinder Wash Solution
3	0705_123.A01	Small Cylinder Receipt and Storage
3	0705_124.A01	F-Area Oxide Glovebox
3	0705_126.A00	RCRA 90 Day Storage Area Roughly Bounded by Columns F-23,G-2 F-24 and G-24
3	0705_127.A00	Classified Scrap Metal (Seal Parts Only)
3	0705_128.A00	Storage of 8-inch EBS Pipe in the Large Parts Cage
3	0705_129.A00	Decontamination of Unfavorable Geometry Parts in Tunnel Spray Booths
3	0705_130.A00	Testing of the 5-inch and 8- & 12-inch Cylinder Cleaning Operations
3	0705_131.A00	Draining, Transferring, and Collecting Uranium-Bearing Liquids in 2
3	0710_001.101	Use of NilFisk Model 80 Portable Vacuum in X-710
3	0710_007.A00	Small Diameter Container Storage in X-710
3	0710_014.A00	X-Ray Fluorescence Laboratory
3	0710_015.A02	Handling of Samples and Process Waste in ES&H Analytical Labs
3	0710_022.A00	Laboratory Standards and Controls
3	0710_023.A00	Miscellaneous Uranium Operations
3	0710_024.A00	Handling and Storage of Sources
3	0710_025.A00	Handling and Storage of Samples from ES&H Analytical Labs
3	0710_027.A00	Uranium Sampling Laboratory HEU Operations
3	0720_001.A02	Cleaning Lightly Contaminated Floor Areas
3	0720_003.A01	Dry Blast Machines for Non-Visibly Contaminated Parts
3	0720_009.A00	Small Parts Glovebox
3	0720_014.A00	Valve Shop Vapor Degreaser
3	0720_015.A02	Cleaning and Decontaminating Space Recorder Cans
3	0720_016.A00	Transmitter Cleaning Station
3	0720_018.A00	Hydro Table In the X-720 Hydro Shop

PRIORITY	NCSANBR	SUBJECT
3	0847_001.A03	General Storage of Uranium-Bearing Waste, XT-847
3	0847_002.001	Storage of B-25 Waste Boxes at XT-847
3	PLANT001.0C1	Storing Small Diameter Containers in Plastic Bags, Plant
3	PLANT002.0C1	Water Cooling of UF6 Cylinders at LAW, ERP, Tails, X-342 and X-34
3	PLANT014.A00	Use of Unsafe Geometry Vacuum Cleaners
3	PLANTC16.A00	Use of Commercial Floor Scrubbing Machines and Power Sweepers
3	PLANT017.A00	Storage and Handling of B-4 Pumps
3	PLANT028.A04	Removal and Handling of PEH Equipment
3	PLANT034.A00	Liquid Waste Collection and Sampling Systems
3	PLANT036.A00	Storage of Safe Batch Containers
3	PLANT037.A00	Use of Small Diameter Container Carts
3	PLANT045.A01	Limited Safe Volume Containers
3	PLANT066.A02	Mop Buckets
3	PLANT070.A00	Miscellaneous Waste Accumulation Areas
3	PLANT071.A00	Use of Portable HEPA Ventillation Units
3	PLANT074.A00	Decontamination Using a Steam Jenny
3	PLANT077.A00	Long Term Storage of Legacy PEH Equipment

TOTAL PRIORITY :

100

TOTAL 199