RADIOACTIVE WASTE PROCESS CONTROL PROGRAM MANUAL

CORPORATE PROCESS CONTROL PROGRAM

NEDL SDQA "C"

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CORPORATE PROCESS CONTROL PROGRAM

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CORPORATE PROCESS CONTROL PROGRAM

1. INTRODUCTION

1.1 Purpose

The Duke Energy Radioactive Waste Process Control Program Manual addresses all the requirements for the "Solid Radioactive Waste" section in Selected Licensing Commitment 16.11, "Radiological Effluent Controls" at each of the Duke Energy nuclear stations.

1.1.1 The Process Control Program (PCP) describes the administrative and operational controls used for the solidification of liquid or wet radioactive wastes and the dewatering of wet radioactive wastes. Its purpose is to assure that the final disposal waste product meets applicable Federal, State and Disposal Site waste form requirements for burial at a 10CFR61 licensed Low Level Waste (LLW) disposal site per the "Commitment" section of the Solid Radioactive Wastes section in SLC 16.11.

1.1.2 Waste processing (solidification or dewatering as described below) equipment and services may be provided by Duke Energy or vendors. Any process used shall meet all applicable requirements of the Process Control Program.

1.1.3 This Corporate PCP section specifically describes the processes required to meet the Remedial Action requirements and Surveillance Requirements of ONS SLC 16.11.5, MNS SLC 16.11.11 and CNS SLC 16.11-11. These are summarized below:

1.1.3.1 Actions required prior to the next shipment for disposal of solidified or dewatered wastes if applicable regulatory requirements for solidified or dewatered wastes are not satisfied (See Corporate PCP Sections 10 & 11).

1.1.3.2 Actions required prior to next solidification for shipment of waste for disposal at a 10CFR61 disposal site if a solidification test fails to verify solidification (See Corporate PCP Section 10).

1.1.3.3 Actions required whenever solidification or dewatering for disposal is not performed in accordance with the PCP (See Corporate PCP Sections 10 & 11).

1.1.3.4 Actions required with the solid waste equipment incapable of meeting SLC 16.11 Solid Radioactive Waste requirements, or not in service (See Corporate PCP Sections 10 & 11).

1.1.3.5 The Surveillance Requirement pertains only to solidification and is contained in section 10. "The Process Control Program shall be used to verify the Solidification of at least one representative test specimen from at least every tenth batch of each type of radioactive waste to be solidified for disposal at a 10CFR61 disposal site per the COMMITMENT of this SLC."

1.1.4 It is the responsibility of the LLW generator to ensure that PCP requirements are met and that the condition of the waste is acceptable upon arrival at the disposal site.

1.2 Radioactive Waste Process Control Program Description

The Radioactive Waste PCP Manual meets NRC requirements for a Process Control Program. It is published as a manual and controlled copies are maintained in the following locations:

- Online PCP Manual: NEDL (Portal)/Licensing/ELL Document
- Nuclear General Office (NGO) Chemistry copy of the PCP Manual: NGO Chemistry Satellite File

1.3 Radioactive Waste PCP Manual Contents

The PCP manual is comprised of:

1.3.1 CORPORATE PROCESS CONTROL PROGRAM

The Corporate Process Control Program (PCP) describes the technical and operational requirements that shall be met by each nuclear station to ensure final solidification or dewatering radioactive waste products meet applicable federal and state disposal regulations. It also includes documentation of the required approvals for the current revision of the Corporate PCP. The requirements comprise a system wide program and are applicable to all of the nuclear stations as defined in their individual PCP program appendices described below.

1.3.2 APPENDIX A "OCONEE NUCLEAR STATION PCP"

Each station has a site specific PCP describing the Nuclear Generation documents used for implementing the requirements of the Corporate PCP. The station PCPs are contained in APPENDIX A, B and C. Each site PCP contains the following:

- Documentation of the required approvals for the current revision of the station PCP per APPENDIX E
- A list of Nuclear Generation procedures used to implement the Corporate PCP requirements
- A list of drawings showing plant radwaste systems interfaces with solidification and dewatering equipment used to meet the Corporate PCP
- Exceptions to the Corporate PCP

1.3.3 APPENDIX B "Mc GUIRE NUCLEAR STATION PCP" (for content see 1.3.2)

1.3.4 APPENDIX C "CATAWBA NUCLEAR STATION PCP" (for content see 1.3.2)

1.3.5 APPENDIX D "APPROVED SUPPLIERS OF PCP SERVICES"

This table contains the following:

- List of vendors approved for PCP services
- Describes approved services and specific requirements

1.3.6 APPENDIX E "PCP MANUAL REVIEW AND APPROVAL REQUIREMENTS"

This table describes who shall perform the reviews and approvals for each section of the PCP Manual.

1.3.7 APPENDIX F "ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS"

This appendix is a comprehensive administrative guideline for control and distribution of the PCP manual and its supporting documents. Its contents are summarized below.

1.3.7.1 Administrative processes for the PCP manual

- Revisions, reviews and approvals
- Electronic publication

1.3.7.2 Administrative processes for Nuclear Generation implementing procedures

- Revisions
- Retention requirements

1.3.7.3 Administrative processes for use of vendor documents

- Revision review and evaluation for impact
- Control, distribution and retention of vendor documents

1.3.8 APPENDIX G "WASTE PROCESSOR CHECKLIST"

This is a template of technical review criteria used by NGO Radiation Protection and Chemistry to pre-approve and renew radwaste vendors for inclusion in the QA Approved Supplier List.

1.3.9 APPENDIX H "REVISION SUMMARY - LICENSEE INITIATED CHANGES"

This appendix summarizes changes for current PCP manual revisions for reference during reviews and for record retention.

2. APPLICABILITY

2.1 Liquid and Wet Radioactive Waste Disposal

2.1.1 Final Safety Analysis Report Chapter 16, Selected Licensee Commitments, Section 11 requires that the Solid Radwaste System or an approved alternative process be used in accordance with a PCP for the solidification of liquid or wet radioactive wastes or the dewatering of wet radioactive wastes to be shipped for direct disposal at a 10CFR61 licensed disposal site such that the final product meets all applicable disposal site requirements.

2.1.2 These "Process Control Program" requirements are applicable to all liquid or wet radioactive wastes that are being prepared for direct disposal at a 10CFR61 LLW disposal facility.

2.1.3 Radioactive wastes shipped for off site processing in accordance with the processor's specifications and transportation requirements are not required to be solidified or dewatered to meet disposal requirements and are not subject to the solidification or dewatering requirements of this PCP.

2.2 Mixed Waste Disposal

2.2.1 Environmental Work Practice 2.9 "Mixed Waste" defines the Mixed Waste program at Duke Energy nuclear stations.

2.2.2 The PCP is only applicable when Mixed Waste is solidified for disposal at a 10CFR61 disposal site.

2.2.3 NGO Chemistry shall approve the use of solidification for disposal of Mixed Waste.

2.2.4 If Mixed Waste is to be disposed of as LLW at a 10CFR61 disposal site by rendering it non-hazardous using solidification, the solidification shall be done according to PCP requirements.

2.2.5 Disposal of Mixed Waste at a Low Level Radioactive Waste disposal site is prohibited except under the following conditions:

2.2.5.1 The waste shall meet the 40 CFR part 266 exemption criteria, 10 CFR part 61 disposal requirements and all applicable state and disposal site requirements.

2.2.5.2 Approval for disposal shall be obtained from the disposal site prior to disposal. (e.g., Barnwell):

A. No mixtures of radioactive waste and hazardous waste (Mixed Waste), as defined by 40CFR261 and S.C. Management Registration 61-79.261, are acceptable for burial in Barnwell.

B. However, a Mixed Waste which was classified as hazardous solely because it exhibited one or more characteristics defined in 40CFR261 Subpart C, but has been treated in a manner such that it no longer exhibits any of these characteristics, will be reviewed on a case-by-case basis for burial acceptance.

2.2.6 All vendors supplying solidification services for Mixed Waste shall meet the requirements of applicable PCP sections and be listed in Appendix D "Approved PCP Service Suppliers".

2.3 Radioactive Waste Oil Disposal

2.3.1 Radioactively contaminated oil is to be managed as described in the EWP 2.8 "Used Oil".

2.3.2 Each disposal site defines the acceptable threshold for incidental levels of waste petroleum-based oil (e.g., less than 1% by volume). Solidified waste containing oil shipped to a 10CFR61 disposal site shall meet the applicable requirements of this Process Control Program and all applicable disposal site acceptance criteria.

2.3.3 If a disposal site accepts greater than incidental concentrations of oil to be solidified for disposal, an oil-specific procedure that meets the requirements of this PCP and the acceptance criteria of that disposal site shall be used (e.g., on a case-by-case basis, SCDHEC may approve solidification of synthetic oils for burial at the Barnwell, SC LLW disposal site).

2.4 Radioactive Waste Interim Storage

Nuclear Generation procedures shall be established to ensure that all of the following interim storage requirements are met.

2.4.1 Any processed (i.e., solidified or dewatered) radioactive waste that is stored for an interim period in a disposal container shall be packaged such that there is no interaction between the waste and its container.

2.4.2 If applicable, Certificates of Compliance shall be maintained at each station for all waste disposal containers used for interim storage.

2.4.3 Vendor supplied containers used for storage shall be handled and stored according to applicable guidance in vendor procedures, including chemical compatibility requirements.

3. REGULATORY REFERENCES

3.1 Regulatory Requirements

The use of and content of the PCP addresses requirements found in the following regulations:

3.1.1 10CFR20, “Standards for Protection Against Radiation”

3.1.2 10CFR50, “Domestic Licensing of Production and Utilization Facilities”

3.1.3 10CFR61, “Licensing Requirements for Land Disposal of Radioactive Waste”

3.1.4 l0CFR7l, “Packaging and Transportation of Radioactive Materials”

3.1.5 40CFR, “Protection of Environment”

3.1.6 40 CFR Part 266 “Storage, Treatment, Transportation, and Disposal of Mixed Waste”

3.1.7 Licensed radioactive waste burial site criteria

3.1.8 State hazardous waste regulations

3.2 Regulatory Guidance

In order to assure compliance with the above regulations, the NRC has provided guidance in the following documents:

3.2.1 NUREG-0133, “Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants”

3.2.2 NUREG-0452, “Standard Technical Specifications for Westinghouse PWR's” (Superseded by NUREG 1431)

3.2.3 NUREG-1431 “Standard Technical Specifications Westinghouse Plants”

3.2.4 NUREG-1430 “Standard Technical Specifications Babcock and Wilcox Plants”

3.2.5 NUREG-800 “Standard Review Plan”, Section 11.4 “Solid Waste Management Systems”

3.2.6 NUREG 800, Section 11.4, Appendix -A, “Design Guidance for Temporary Onsite Storage of Low Level Radioactive Waste”

3.2.7 Branch Technical Position - ETSB 11-3, “Design Guidance of Solid Radioactive Waste Management Systems”

3.2.8 NRC Review Criteria for Solid Waste Management Systems

3.2.9 Regulatory Guide 1.143, “Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Plants”

3.2.10 NRC "TECHNICAL POSITION ON WASTE FORM" Revision 1 (January 1991)

3.2.11 ANSI/ANS-40.37-1993 “mobile radioactive waste processing systems”

4. DUKE ENERGY PROGRAMMATIC REFERENCES

4.1 Oconee Technical Specification 5.6.2 "Annual Radiological Environmental Operating Report"

4.2 Site-specific Selected Licensee Commitments

4.2.1 Catawba SLC 16.11-11 "Solid Radioactive Waste"

4.2.2 Catawba SLC 16.11-16 "Annual Radiological Environmental Operating Report and Radioactive Effluent Release Report"

4.2.3 Catawba SLC 16.13.2 "Technical Review and Control"

4.2.4 McGuire SLC 16.11.11 "Solid Radioactive Waste"

4.2.5 McGuire SLC 16.11.17 "Radioactive Effluent Release Report"

4.2.6 McGuire SLC 16.13.2 "Technical Review and Control"

4.2.7 Oconee SLC 16.11.5 "Solid Radioactive Waste"

4.2.8 Oconee SLC 16.13.2 "Technical Review and Control"

4.3 Oconee UFSAR Chapter 11

4.4 Catawba UFSAR Chapter 11

4.5 McGuire UFSAR Chapter 13

4.6 Duke Power Company QA Program "Topical Report"

4.7 "CNS 10 CFR Part 61 Waste Classification and Waste Form Implementation Program"

4.8 "MNS 10 CFR Part 61 Waste Classification and Waste Form Implementation Program"

4.9 "ONS 10 CFR Part 61 Waste Classification and Waste Form Implementation Program"

4.10 Duke Energy Information Retention Policy

Ref: (Legal 109, 10CFR20 Appendix G (III.A.3), 10CFR61.80)

4.11 NSD 701 "Records Management"

4.12 NSD 703 "Administrative Instructions for Technical Procedures"

4.13 Catawba, McGuire & Oconee Environmental Work Practice (EWP) 2.8 "Used Oil"

4.14 Catawba, McGuire & Oconee EWP 2.9 "Mixed Waste"

4.15 Supply Chain Document (SCD) 510 "Approved Suppliers List"

4.16 SCD 520 "Audits of Suppliers"

4.17 SCD 285 "Procurement of QA Condition 2, 3, and 4 Items"

4.18 Operating Experience (OE) & Problem Investigation Process (PIP)

4.18.1 G-99-00349 (NGO Radwaste Support PCP evaluation)

4.18.2 C-99-05094 (SLC 16.11 Issues related to PCP requirements)

4.18.3 G-00-401 (QA Audit -General Office Assessment SA-00-29(GO) (RA))

4.18.4 O-00-4680 (ONS filter dewatering procedure use)

4.18.5 C-01-02522 (2001 CNS NRC Audit)

4.18.6 O-01-01067 (Filter HIC dewatering clarification)

4.18.7 G-02-00272 (QA Audit -Assessment GO-02-31(NPA) NSD)

4.18.8 O-03-0624, M-03-2515, C-03-3385 (ONS FSL Failure Root Cause)

5. DEFINITIONS

5.1 Safety Analysis Report (SAR)

The station's Technical Specifications (Tech Specs) updated final safety analysis report, licensee commitments, safety evaluation reports and the facility operating license.

5.2 Selected Licensee Commitments (SLCs)

Commitments to control important plant equipment and operating conditions not controlled elsewhere. Operational commitments which are to be removed from existing station Tech Specs may be included in the SLC program. Also included in this program

can be selected NRC commitments contained in licensing documents such as the station's SERs, LERs, violation responses, generic letter and bulletin responses, submittal documents and other Duke letters to the NRC.

5.3 10CFR Part 61 "Licensing Requirements for Land Disposal of Radioactive Waste"

This NRC regulation requires that low-level radioactive waste (LLW) meet certain waste form acceptance criteria in order to be received for disposal at NRC and Agreement State licensed radioactive waste disposal sites.

5.4 Free Standing Liquid (FSL)

FSL is liquid that is in a disposal container but is not bound by the waste in the container. FSL is the liquid available for release if disposal container integrity is lost (e.g., punctured). The amount of FSL in a radioactive waste disposal container shall be less than a specified threshold in order to meet 10CFR61, state and disposal site requirements for disposal.

5.5 Liquid Radioactive Wastes

Radioactive wastes comprised primarily of water containing a combination of dissolved and suspended solids (e.g., evaporator concentrates, lab wastes, floor and equipment drain water, laundry, wet waste decant or drainage, etc.).

5.6 Wet Radioactive Wastes

Wet radioactive wastes are solid radioactive wastes containing loosely bound liquid that can collect in the disposal container as FSL (e.g., slurry wastes are comprised primarily of solid particles suspended in loosely bound interstitial water, spent mechanical filters are solid materials that are adsorbent or porous and retain liquid).

5.7 Solidification

Solidification is a process that converts radioactive waste into a product meeting 10CFR61, State and disposal site requirements for waste-form stability and FSL. Solidification is accomplished by mixing measured amounts of liquid or wet radioactive waste, binder and required additives that, after sufficient curing time, produce a solid homogeneous, freestanding monolith. At the end of the curing period, the absence of excessive FSL is verified either by confirmation that the PCP was followed or by physical verification/testing.

5.8 High Integrity Container (HIC)

Disposal containers that have been approved by the NRC for disposal of Class A unstable, Class B or Class C LLW and meet the long term stability requirements of 10CFR61 and the disposal site.

5.9 Dewatering

Dewatering as used in this document is the removal of liquid using a process that is required to meet the requirements of this PCP. Dewatering removes the loosely bound liquid from a wet radioactive waste such that accumulation of Free Standing Liquid in the disposal container is unlikely to approach the disposal limit threshold values as defined by applicable regulations and disposal site criteria. NRC regulations require that the process used to dewater radioactive wastes to meet disposal criteria shall be governed by a PCP.

5.9.1 10CFR61 FSL criteria requires less than 0.5% FSL by waste volume per container or less than 1.0% FSL if a high integrity container (HIC) is used.

5.9.2 Typically, liquid and wet wastes are pre-staged in vented tanks or containers and are therefore degassed prior to the dewatering process. However, all vendor-required venting practices should be adhered to.

5.10 Unwatering (Gross Dewatering)

Unwatering as used in this document is the removal of water using a process that is not required to meet the requirements of this PCP. Unwatering removes loosely bound excess or freeboard water from wet radioactive wastes such that only the requirements for transportation set forth in 49CFR are satisfied (e.g., unwatering may be used to prepare waste for shipment to an approved offsite processor who will perform additional processing that will meet the final disposal requirements).

5.11 Mixed Waste

Defined in Resource Conservation Recovery Act (RCRA) as amended by the Federal Facility Compliance Act of 1992, a Mixed Waste contains both RCRA hazardous waste and source, special nuclear, or byproduct material subject to the Atomic Energy Act of 1954, as amended. The use of solidification to render Mixed Wastes non-hazardous shall ensure that the final product meets all waste form requirements applicable to radioactive waste disposal at a 10CFR61 disposal site (Ref: 3.1.6. “40 CFR Part 266”).

5.12 QA Approved Supplier List

Radwaste vendors approved to provide PCP processing are included on the QA Approved Supplier List and are subject to the requirements and audits of that program.

5.13 Waste Batch

A "batch" shall be defined as an isolated quantity of waste to be processed having essentially consistent physical and chemical characteristics.

5.14 Waste Batch Mixing

A Waste Batch shall be adequately mixed using a proceduralized process such as agitation via mixers, air sparging or recirculating flow which meets a specified minimum rate that has been determined to provide a representative sample for the vessel.

5.15 Process Parameters

Those conditions measured or observed during a solidification or dewatering process to ensure an acceptable product. These are determined for each waste type and are specific to the process method used.

5.16 Boundary Conditions/ Acceptance Criteria

5.16.1 Solidification Boundary Conditions or Acceptance Criteria are defined as, the bounding numerical values for solidification process parameters that produce an acceptable product.

5.16.1.1 The Boundary Conditions are verified by using a Bench Scale Test Solidification.

5.16.1.2 A Bench Scale Test Solidification is performed on a small representative sample of the Waste Batch using the prescribed formulation and conditions that model those parameters critical to the full scale solidification process

5.16.1.3 The Bench Scale Test product is then verified to meet the acceptance criteria for that waste form.

5.16.1.4 For Mixed Waste solidification, the Boundary Condition values also ensure that the final solidified product is rendered non-hazardous and are verified through lab testing of the Bench Scale Test product.

5.16.2 Dewatering Boundary Conditions or Acceptance Criteria are defined as the bounding numerical values for process parameters that ensure free standing liquid requirements are met.

5.16.2.1 Media: Acceptance Criteria for dewatering process media in disposal containers (e.g., HICs) have been determined by vendor tests using real or simulated waste to demonstrate the adequacy of the dewatering process for each combination of waste type and container. These tests are documented in dewatering Topical Reports, or equivalent, that shall be approved by the NRC before the containers are certified for use. The Acceptance Criteria are then incorporated into the dewatering procedures for each combination of waste type and container.

5.16.2.2 Filters: Acceptance criteria for mechanical filters (e.g., cartridge, bag, membranes, etc.) are derived from tests performed on the various types of filters in use. Tests performed by Duke Energy should be documented in a retrievable manner (e.g., PIP, Memo in Master file, etc.). Acceptance criteria are then incorporated into the applicable procedure for each filter type (e.g., drainage time, drainage conditions, etc.).

5.17 Topical Report (PIPs O-03-0624, M-03-2515, C-03-3385)

A Topical Report provides the basis for a PCP technology & process. It documents test results that demonstrate regulatory requirements were met during the regulatory required testing for solidification or dewatering technologies and processes. All currently approved processes developed to dewater or solidify waste have been approved by the NRC based their review of the Topical Report for that process. Topical report testing was designed to envelope the worst case dewatering scenarios given the industry's then current practices. As with any topical based program, the critical conditions and parameters identified during testing are incorporated into the implementing process with enough conservative margin to ensure success if you operate within the enveloping conditions and assumptions of the tests performed. When actual conditions vary from the conditions in the specific tests performed for the Topical Report, the correlation with the Topical testing is diminished and degree of conservatism must increase to compensate.

6. RESPONSIBILITIES

6.1 Nuclear General Office

6.1.1 NGO Chemistry is the owner, sponsor and administrator for the PCP including the following activities:

6.1.1.1 Revises and publishes PCP Manual per APPENDIX F "Administration of the PCP and Support Documents"

6.1.1.2 Technical contact for PCP issues

6.1.1.3 Ensures corporate Chemistry program complies with applicable PCP requirements

6.1.1.4 Supports nuclear site Chemistry programs in complying with applicable PCP requirements

6.1.1.5 Provides review and approval of PCP service providers

6.1.1.6 Authors and approves PCP Manual revisions per APPENDIX E "PCP Manual Review and Approval Requirements"

6.1.2 Nuclear General Office Radiation Protection (RP)

6.1.2.1 Ensures corporate RP program complies with applicable PCP requirements

6.1.2.2 Supports nuclear site RP programs in complying with applicable PCP requirements

6.1.2.3 Provides review and approval of radioactive waste processors

6.1.2.4 Reviews PCP revisions per APPENDIX E "PCP Manual Review and Approval Requirements"

6.1.3 Nuclear Supply Chain

6.1.3.1 Maintains PCP vendors in Approved QA supplier list

6.1.3.2 Communicates NUPIC QA audits and issues related to PCP vendors to NGO Chemistry Radwaste support staff

6.2 Nuclear Safety Review Board

6.2.1 Audits of the Process Control Program and implementing procedures for Solidification of radioactive wastes shall be performed under the cognizance of the NSRB per Duke Power Company QA Program "Topical Report".

6.2.2 Copies of revisions to the Duke Energy Radioactive Waste PCP manual are reviewed by the NSRB per SLC 16.13.2 "Technical Review and Control"

6.3 Nuclear Stations

The PCP applies to all liquid or wet radioactive waste generated at the nuclear site when it is solidified or dewatered for direct disposal at a 10CFR61 disposal site. Any group that has responsibility for activities that generate or manage these wastes shall ensure their programs and processes comply with and support compliance with the applicable portions of the PCP. The following responsibilities are currently identified within specific groups or positions, but will be applicable to any group that has the responsibility. Any changes in these responsibilities and the groups to whom they are assigned should be evaluated for impact and potential incorporation into the PCP Manual.

6.3.1 Station Manager approves PCP revisions per APPENDIX E "PCP Manual Review and Approval Requirements"

6.3.2 Station Line Management responsible for programs impacting the PCP ensures those programs comply with the site PCP. Currently identified program owners:

6.3.2.1 Station Chemistry Manager approves PCP revisions per APPENDIX E "PCP Manual Review and Approval Requirements"

6.3.2.2 Station Chemistry General Supervisors ensure Chemistry programs and resources comply with and support the PCP Manual, (e.g., site PCP, dewatering procedures)

6.3.2.3 Station RP Management ensures RP programs and resources comply with and support the PCP Manual, (e.g., site PCP, filter dewatering, shipping process interface with PCP activities)

6.3.3 Station Staff and Line Supervisors ensure applicable area-specific procedures and activities comply with the PCP

6.3.3.1 Station Chemistry Staff

A. Ensures site PCP complies with the Corporate PCP

B. Ensures Chemistry dewatering or solidification procedures comply with the Corporate PCP

C. Serves as Subject Matter Expert on Chemistry PCP processes at the site

D. Reviews PCP revisions per APPENDIX E "PCP Manual Review and Approval Requirements"

6.3.3.2 Station Radiation Protection Staff and/or RM&C Supervision

A. Ensure RP procedures comply with applicable PCP Manual requirements (e.g., filter dewatering/disposal, shipping procedures, shipping and disposal paperwork)

B. Reviews PCP revisions per APPENDIX E "PCP Manual Review and Approval Requirements"

6.3.4 Station Technicians ensure current documents are used to implement PCP-related activities

6.3.4.1 Station Chemistry Technicians implement applicable portions of the site PCP, (e.g., dewatering process media)

6.3.4.2 Station Radiation Protection Technicians implement applicable portions of the site PCP, (e.g., dewatering mechanical filters)

6.3.5 Regulatory Compliance incorporates the PCP revision summary report into the site Annual Effluent report.

6.3.6 Manager, Safety Assurance assures the performance of a review by a knowledgeable individual/organization of changes to the Process Control Program per SLC 16.13.2

7. ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS

7.1 PCP Manual Administration

See APPENDIX F "Administration of the PCP and Support Documents"

7.2 PCP Revision Reports to the NRC

Revisions to the PCP shall be reported to the NRC each year as described in APPENDIX F "Administration of the PCP and Support Documents".

7.3 PCP Audit Process

The Duke Power Company QA Program "Topical Report" describes the internal auditing requirements for the Corporate PCP and Nuclear Generation implementing procedures under the cognizance of the NSRB at each station and the General Office.

7.4 PCP Manual Revision Record Retention Requirements

See APPENDIX F "Administration of the PCP and Support Documents"

7.5 Periodic cross-checks & comparisons (PIP O-03-0624 CAPR)

Periodic cross-checks & comparisons of each nuclear site's dewatering process guidance, dewatering techniques and equipment will be performed as part of the following activities:

7.5.1 Every other year during the annual Chemistry Functional Area Evaluation as part of section 8.4 "Implementation of Process Control Program" of the Performance Attributes Matrix

7.5.2 Other benchmarking opportunities (e.g., benchmark trips by Radwaste personnel, annual Radwaste workshop discussion groups identify current industry practices and site contacts for comparison of practices

7.6 PCP Implementing Procedure Requirements

7.6.1 Nuclear Generation procedures shall be established to ensure that all requirements for solidification or dewatering are met when performed by site-assigned personnel.

7.6.2 The administrative requirements for PCP implementing procedures are described in APPENDIX F "Administration of the PCP and Support Documents".

7.6.2.1 Completed procedures documenting the solidification verification records described in section 10 shall be maintained by Duke Power Company on each vessel of solidified waste as described in section 5.5 of APPENDIX F.

7.6.2.2 Documentation of the dewatering verification records described in section 11 shall be maintained by Duke Power Company on each vessel of dewatered waste as described in section 5.5 of APPENDIX F.

7.6.3 Vendors providing onsite PCP services may use their own vendor procedures to perform PCP services using non-installed equipment as described in NSD 703 provided they meet the applicable requirements of the PCP Manual.

7.6.4 Vendor documents directing solidification or dewatering activities of site assigned personnel shall be incorporated into site implementing procedures as described in APPENDIX F.

8. APPROVAL PROCESS FOR QA APPROVED SUPPLIERS

Any supplier shall be approved and incorporated into the QA Approved Supplier Program prior to being contracted for PCP services.

8.1 Technical Review and Approval

Before vendors can provide PCP related services, they shall be evaluated against the Duke Energy Radioactive Waste PCP Manual and approved by the Technical Manager, Nuclear Chemistry or his designee.

8.1.1 Prior to awarding a contract to a supplier for processing site radioactive waste, vendors are subjected to a review using criteria outlined in APPENDIX G "Waste Processor Checklist"

8.1.2 If the vendor provides PCP related services, the vendor PCP and other related program documents are evaluated to ensure they meet the applicable requirements of the Duke Energy Radioactive Waste PCP Manual as described in section 9 below.

8.1.3 The results of these reviews should be documented in a PIP for future reference.

8.2 QA Supplier Evaluation

Upon meeting the requirements of the technical review, the supplier is evaluated for incorporation into the QA Supplier program in accordance with the requirements of Duke Energy Nuclear Quality Assurance Program.

8.3 QA Approved Supplier Program

All vendors approved to provide PCP related services are included in the QA Approved Suppliers List. The QA processes that apply are described in the following Supply Chain documents

8.3.1 SCD 510 "Approved Suppliers List"

8.3.2 SCD 520 "Audits of Suppliers"

8.3.3 SCD 285 "Procurement of QA Condition 2, 3, and 4 Items"

9. PCP REQUIREMENTS FOR VENDOR PROCESSES AND SERVICES

9.1 Topical Report (or equivalent)

Any vendor service or vendor supplied processes utilized for solidification or dewatering by Duke Energy shall have a Topical Report or other form of certification documenting NRC approval of the process and associated containers, or shall supply to Duke Energy sufficient documentation of the process and test results to demonstrate that an acceptable product will be produced using the described solidification or dewatering process.

9.2 10CFR61 Waste Form Compliance

9.2.1 The vendor(s) approved for solidification or dewatering services shall have NRC certification documenting compliance with waste form requirements in the final product, or shall supply Duke Energy sufficient documentation to demonstrate waste form compliance.

9.2.2 Any vendor providing High Integrity Containers (HIC's) to Duke Energy shall have a NRC approved report documenting compliance with waste form requirements, or shall supply Duke Energy sufficient documentation to demonstrate waste form compliance.

9.2.3 All vendor Topical Reports or equivalent shall certify that the final product conforms to the appropriate waste form for Class A, B, or C waste.

9.2.4 Vendor PCP Service Quality Requirements

QA Approved PCP Service Suppliers shall meet the applicable quality requirements set forth in their Purchase Order. Examples of such requirements are described in APPENDIX D "Approved PCP Service Suppliers".

9.3 10CFR61Waste Classification Compliance

9.3.1 Each container of processed (i.e., solidified or dewatered) waste shall be classified as Class A, B, or C waste using the "10 CFR Part 61 Waste Classification and Waste Form Implementation Program" for the applicable station.

9.3.2 Each container of processed waste shall be certified to the appropriate waste form for Class A, B or C waste. Greater-than-Class C waste may be approved for disposal on a case-by-case basis with appropriate approval from the disposal site and agreement state.

9.3.3 Each container of processed Mixed Waste shall be certified to be non-hazardous.

9.4 Minimum Requirements for Onsite Process Vendors

9.4.1 Vendors providing PCP services onsite shall fulfill all of the applicable requirements in the Radioactive Waste PCP Manual and the applicable quality requirements set forth in the Purchase Order prior to shipment of the solidified or dewatered waste offsite for disposal.

9.4.2 Onsite Vendor System/Equipment Interface Requirements:

9.4.2.1 The vendor Topical Report or documentation supplied to Duke Energy shall include a detailed system or process description of all vendor interfaces with installed plant equipment.

9.4.2.2 Drawings or diagrams shall be included detailing all solidification and dewatering system interfaces with installed plant systems and equipment.

9.4.2.3 Solidification system ventilation discharge is treated or routed to the plant's auxiliary building or radwaste facility ventilation system to meet effluent discharge requirements.

9.4.2.4 Decanted radioactive liquid is processed as required or routed to the station liquid radwaste systems.

9.4.2.5 This information may be included as part of a Topical Report furnished by the equipment manufacturer or supplier or as part of the station specific Final Safety Analysis Report.

9.4.3 Onsite Vendor System Design Requirements

9.4.3.1 The vendor Topical Report or equivalent documentation supplied to the Duke Energy shall include a statement that the design, construction, operation and quality assurance provisions are in accordance with NRC ETSB Branch Technical Position 11-3 and Regulatory Guide 1.143.

9.4.3.2 Permanent or portable solidification and dewatering systems used at nuclear sites shall meet the design, construction, operation and quality assurance provisions of NRC ETSB Branch Technical Position 11-3 and Regulatory Guide 1.143.

9.5 Minimum Requirements for Offsite PCP Process Vendors

Vendors providing PCP services offsite shall meet the requirements of their PCP process and the applicable quality requirements set forth in the Nuclear Supply Chain Purchase Order prior to disposal of the final product.

10. PCP SOLIDIFICATION PROCESS DESCRIPTION

Waste solidification at Duke Energy nuclear stations shall be performed in a manner equivalent to the process described below using approved procedures in a controlled and quality fashion which ensures that all applicable regulatory and disposal site criteria are met. Procedures used to direct solidification shall include the adequate detail to implement a process equivalent to that described below.

NOTE: Whenever a solidification process is used to meet 10CFR61 disposal site requirements, "Surveillance Requirements" in ONS SLC 16.11.5, MNS SLC 16.11.11 and CNS SLC 16.11-11 shall be fulfilled by using procedures that meet or surpass the Bench Scale Test solidification verification and frequency requirements below or by verifying these requirements are met by the vendor program/process being used.

10.1 Waste Characterization

The waste sample shall be characterized chemically, physically and radiologically. Sample analyses such as the following shall be performed as outlined in site-specific procedures for the applicable waste form and solidification media to be used.

10.1.1 Waste pH

10.1.2 Waste density

10.1.3 Waste boron concentration

10.1.4 Waste oil content

10.1.5 Gamma Analysis

10.2 Mixed Waste Characterization

10.2.1 Process knowledge may be used for hazardous waste characterization with approval by the appropriate knowledgeable individual.

10.2.2 If process knowledge cannot be used, the hazardous characteristics shall be determined before solidification using an approved method.

10.2.3 The disposal site shall be notified to obtain pre-approval for disposal whenever a waste determined to be a Mixed Waste is being rendered non-hazardous by solidification.

10.3 Minimum Solidification Acceptance Criteria

Minimum Solidification Acceptance criteria are listed below, but additional criteria may be added by the disposal site and shall be included in the verification process:

10.3.1 FSL Criteria: Liquid wastes, or wastes containing liquid, shall be converted into a form that contains as little free standing and non-corrosive liquid as is reasonably achievable, but in no case shall the liquid exceed 1% of the volume of the waste when the waste is in a disposal container designed to ensure stability, or 0.5% of the volume of the waste for waste in a disposal container not designed to meet stability requirements and/or waste processed to meet waste form stability requirements independent of the disposal container.

10.3.2 Physical Criteria: the solidified product shall be a free-standing, non-friable and homogeneous monolith.

10.3.3 Chemical Criteria: The solidified product of a Mixed Waste shall be rendered non-hazardous.

10.4 Representative Waste Sample

A representative sample of the waste to be solidified shall be obtained by a process equivalent to the following as outlined in approved procedures for the applicable waste form and solidification media.

10.4.1 A representative waste sample shall include the characteristics of the waste that are critical to the solidification process being used

10.4.2 The contents of the container to be sampled shall be adequately mixed to achieve a homogeneous mixture

10.4.3 During the mixing and sampling period, the vessel shall not be placed in a transfer mode nor shall additional waste be received

10.4.4 Vessel level readings or input isolation shall be documented at the time of mixing initiation, sampling, and process initiation

10.4.5 Recirculation or mixing time shall be uninterrupted until sample collection

10.5 Bench Scale Test Solidification

The boundary conditions are demonstrated by producing a solidified product during the Bench Scale Test that meets the minimum acceptance criteria described above. The test-proven boundary conditions will then be used to perform a full scale solidification that meets these same criteria. A Bench Scale Test Solidification shall be performed using a process similar to the following:

10.5.1 Frequency of Bench Scale Testing (Ref: Solid Waste SLC Surveillance Requirement)

10.5.1.1 The minimum frequency for performing Bench Scale Testing shall be as described in the Solid Waste SLC Surveillance requirement: The PCP shall be used to verify at least one test specimen from at least every tenth batch of each type of waste to be solidified for disposal at a 10CFR61 disposal site.

10.5.1.2 Where variability of critical waste parameters is known to be great or is uncertain, the following more conservative frequency shall be followed:

A. An initial Bench Scale Test solidification shall be performed prior to the full-scale solidification of each distinct batch of waste.

B. Where multiple solidifications of the same batch of waste occur after the successful initial Bench Scale Test, a Bench Scale Test shall be repeated at a frequency of no less than once per ten solidifications of that batch.

10.5.2 Establish process parameters and boundary conditions

Process parameters and boundary conditions (or a method by-which to establish them) are usually given in vendor procedures which have already been certified for a given radioactive waste type. Process parameters should include any of the following that are applicable:

- Waste form
- Waste to solidification agent ratio
- Amount of each solidification additive
- Waste pH
- Waste boron concentration
- Waste density

- Waste oil content
- Mixer speed
- Mixing time
- Curing time
- Specific activity
- Pre-solidification hazardous waste characterization

10.5.3 Mixed Waste (additional requirements)

10.5.3.1 Vendor procedures used to solidify Mixed Waste shall be certified to be applicable to the specific waste stream being processed.

10.5.3.2 For Mixed Waste solidified by Duke Energy personnel, a Nuclear Generation procedure shall be developed based on an approved demonstrated process for each specific Mixed Waste stream.

10.5.4 Bench Scale Test Solidification product verification:

Physical testing and laboratory analysis, as described below, shall be utilized to determine if the Bench Scale Test solidified waste sample is a free-standing monolith with the % FSL volume within the acceptance criteria. This testing shall consist of:

10.5.4.1 The % by volume FSL criteria shall be verified by visual inspection or by physical measurement of any visible FSL

10.5.4.2 Physical testing to determine if a solidified waste is a free-standing monolith shall consist of:

A. Visual inspection AND

B. Probe penetration testing to demonstrate non-friability

10.5.5 Mixed Waste Bench Scale Test Solidification product verification:

10.5.5.1 In addition to the physical tests listed above, laboratory analysis using approved EPA methods shall be performed to determine if a solidified Mixed Waste has been rendered non-hazardous.

10.5.5.2 Note that the solidified Mixed Waste need only be analyzed for those hazardous properties it exhibited prior to solidification or those that may have been introduced by the solidification process.

10.5.6 Bench Scale Test Solidification failures (Ref: SLC Remedial Action Requirements)

10.5.6.1 Full Scale Solidification for disposal shall not be performed unless the Bench Scale Test Solidification is acceptable.

10.5.6.2 If any Bench Scale Test Solidification fails to meet the acceptance criteria set forth in section 10.3 "Minimum Solidification Acceptance Criteria", the following actions shall be taken prior to the next solidification for disposal at a 10CFR61 disposal site:

A. Suspend solidification of the batch under test

B. Obtain additional representative samples from the current waste batch of waste

C. Perform additional test solidifications until alternate solidification parameters are determined and solidification verified

D. Modify the PCP and or procedures as required to assure successful solidification of subsequent batches of waste

10.5.6.3 If the initial Bench Scale Test solidification fails SLC Remedial Actions requires that:

A. Representative test sampling solidifications from each consecutive batch of the same type of waste shall be performed using alternate solidification parameters until at least 3 consecutive initial test solidifications meet the minimum solidification acceptance criteria.

B. Modify the PCP and or procedures as required to assure successful solidification of subsequent batches of waste.

10.5.7 Bench Scale Test Solidification results performed onsite shall be submitted to Station Chemistry for review and authorization prior to initiating full scale waste solidification including the following:

10.5.7.1 Sample analysis

10.5.7.2 Test solidification results

10.5.7.3 Prescribed boundary conditions

10.5.7.4 Specific activity to ensure packaging limits of the disposal container will not be exceeded

10.5.8 Bench Scale Test Solidification results performed by an offsite processor shall be handled as follows:

10.5.8.1 Bench Scale Test Solidification failures shall be communicated to the originating site Chemistry supervision prior to performing full scale solidification for disposal.

10.5.8.2 Successful Bench Scale Test Solidification documentation shall be sent to the originating site in the completed PCP documentation for record retention.

10.6 Full Scale Solidification

Actual full scale solidification shall be performed using approved procedures which ensure that the solidification process is operated within the established boundary conditions.

10.6.1 Full scale solidification procedures should contain stepwise instructions with documentation of completion for the following activities:

10.6.1.1 The Bench Scale Test Solidification process described above

10.6.1.2 The full scale formulation of waste additives including mixing requirements

10.6.1.3 The verification described below

10.6.1.4 Documentation of verification that PCP requirements were met

10.6.2 Full Scale Solidification performed in drums shall use new drums (not reconditioned) that meet the requirements of 49CFR.

10.7 Product Verification of Full Scale Solidification

Product verification shall be performed to ensure the acceptance criteria have been met.

10.7.1 Documentation that the Process Control Program was followed and successfully completed may serve as verification of the final solidified product.

10.7.2 Non PCP verification (Ref: SLC Remedial Action Requirements)

If the Process Control Program was not followed or if any unusual condition existed during processing that invalidates the PCP boundary conditions the following actions shall be taken:

10.7.2.1 Reprocess the waste in accordance with PCP requirements, OR

10.7.2.2 Physical testing may be used to verify that disposal site requirements are met:

A. Visual inspection for FSL on top of the waste

B. Probe penetration testing and

C. Puncturing the bottom of the vessel

D. Visual inspection shall be utilized to determine if a solidified waste is a free-standing monolith.

10.7.2.3 Mixed Waste Additional Testing

A. In addition to the above physical testing, laboratory analysis using approved EPA methods shall be performed to determine if a solidified Mixed Waste has been rendered non-hazardous.

B. The solidified Mixed Waste need only be analyzed for those hazardous properties it exhibited prior to solidification or those that may have been introduced by the solidification process.

10.7.2.4 Make programmatic changes as necessary to address any problems identified.

10.7.3 Full scale solidification does not meet the PCP Acceptance Criteria requirements or physical tests described above.

Any full scale solidification vessel that does not pass the verification requirements described above shall not be shipped to a burial site until reprocessing or repackaging has resulted in an acceptable product (Ref: SLC Remedial Action Requirements). Prior to next shipment for disposal of solidified wastes:

10.7.3.1 Suspend shipments of the defectively packaged/inadequately processed solid radioactive wastes from the site AND

10.7.3.2 Initiate action to correct the PCP, procedures, or solid waste equipment as necessary to prevent recurrence

10.7.4 Mixed Waste Pre-approval:

Any solidified Mixed Waste that passes these tests shall not be shipped to a burial site until that burial site has given approval.

10.8 Inoperable Equipment (SLC Remedial Action Requirements)

With the waste solidification equipment incapable of meeting PCP requirements or not in service:

10.8.1 Restore the equipment to operable status, OR

10.8.2 Provide alternative capability as necessary to process wastes per this PCP

10.9 Solidification Document Retention

Solidification records shall be maintained on each vessel of solidified waste as described in section 7.5. of the Corporate PCP and section 5.5 of APPENDIX F "Administration of the PCP and Support Documents". All of the following records that are applicable should be included:

10.9.1 Representative sampling documentation

10.9.2 Sample analysis results

10.9.3 Test solidification results and prescribed boundary conditions.

10.9.4 Documentation of Acceptance Criteria verification from completed Nuclear Generation or vendor solidification procedures such as:

10.9.4.1 FSL verification

10.9.4.2 Free-standing monolith verification

10.9.4.3 If applicable, verification that solidified Mixed Waste is non-hazardous.

11. PCP DEWATERING PROCESS DESCRIPTION

The methods used for removal of liquid from wet wastes for final disposal shall comply with the specific requirements of the disposal site at which the waste is being disposed. Dewatering of wet wastes shall be performed in a manner equivalent to the process described below using approved procedures in a controlled and quality fashion which ensures that all applicable Selected Licensee Commitments and disposal site criteria are met. Procedures used to direct dewatering shall include enough detail to implement a process that addresses the applicable requirements described below.

11.1 Dewatering Mechanical Filters (e.g., cartridge, bag, membrane)

The guidance below addresses dewatering methods and PCP issues unique to disposal of mechanical filters.

11.1.1 Dewatering is required so subsequent accumulation of free standing liquid in the disposal container is not likely to approach disposal site limits.

11.1.2 Wet spent mechanical filters can be dewatered by allowing liquid to drain freely from the filter, blowing the filter down with air, compacting the filter, etc.

11.1.3 The method of dewatering shall be in accordance with a previously defined, evaluated, and documented process.

11.1.4 The parameters of the process, referred to as boundary conditions, shall be defined and used to ensure quality in the process, which in turn serves to ensure an acceptable characteristic of the waste. An example of a boundary condition is the specified period of time for which a mechanical filter shall be allowed to drain freely to ensure FSL will be less than disposal requirements.

NOTE: Removal of free standing liquid from a disposal container shall <u>not</u> be considered the PCP method for dewatering mechanical filters.

11.1.5 Filters placed in a filter disposal container designed for removal of FSL shall meet the PCP boundary conditions for dewatering independent of removal of FSL from the container. If PCP boundary conditions are met after placing the filter in the disposal container, the container shall be unwatered to ensure FSL meets disposal requirements.

11.1.5.1 If the PCP boundary conditions have been met prior to placing the filters in the disposal container, dewatering the container to remove incidental FSL is optional.

11.1.5.2 Case-by case circumstances, such as the following, should be considered in the determining the appropriateness of performing additional filter disposal container dewatering:

- The time interval between removal of the filters from wet service and placement into the disposal container
- Size of the disposal container relative to the moisture content in the filters
- The number of filters
- The variety of filter types in a single container
- The environmental conditions of filter staging and interim storage

11.1.6 Use of absorbent package material in mechanical filter disposal containers is subject to the requirements of the disposal site acceptance criteria.

11.2 Dewatering Slurries

The guidance below addresses dewatering issues associated with slurry wastes.

11.2.1 Dewatering of "slurried" wet wastes (e.g., resin, carbon, Zeolite, filter precoat, filter backwash, sludge) removes the loosely bound interstitial liquid from solids such that the disposal container meets applicable regulatory and burial site FSL criteria for disposal.

11.2.2 Wet spent process media dewatering shall be performed using processes, containers and procedures that have met the requirements described in section 9, "Process Control Program Requirements".

11.2.3 Typical container dewatering processes use a vacuum pump that takes suction from the vessel through a filter system in the vessel. The water is returned to a station liquid radwaste system and the waste solids are retained in the vessel by the container filter(s).

11.3 Additional Conservatism in Slurry Dewatering Procedures to Address Variation from the Topical Report (PIP O-03-0624, M-03-2515, C-03-3385)

Dewatering processes based on Topical Reports are applied to actual conditions that can vary from the conditions of the Topical Report testing. The results of a Root Cause investigation at ONS (O-03-0624) identified several issues and resolutions that should be incorporated into future revisions of dewatering implementing procedures. Vendor procedures applicable to the technologies and processes used by DPCo in implementing the PCP provide the basis for minimal requirements in PCP implementing procedures. In addition the guidelines below have been added based on the Root Cause findings at ONS:

11.3.1 All PCP dewatering procedures shall include flexibility/ guidance for Chemistry to add conservatism to the dewatering process if waste content and/ or process conditions are atypical in a non conservative manner relative to the testing performed for the Topical report (e.g., greater than normal non media solids, dewatering boundary parameters are not easily met, higher than normal volume of FSL is collected during the final dewatering cycle, etc.)

11.3.1.1 Additional conservatism can include but is not limited to the following examples:

A. Additional dewatering cycles

B. Additional settling time between pumping periods

C. Additional processing by an approved offsite vendor to verify FSL prior to disposal

11.3.2 Guidance for dewatering all liners using a PCP for direct disposal at Barnwell (PIP O-03-0624 CAPR)

11.3.2.1 Require liner functional testing prior to filling liner with waste to ensure there are no leaks in the liner dewatering system. This testing should include:

A. filling the liner with water

B. testing each level of the liner dewatering laterals using the dewatering procedure to unwater the liner,

C. verifying that vacuum is not broken prior to exposing the filters for each set of laterals as described in the procedure

11.3.2.2 Ensure ambient temperature guidance for dewatering will preclude localized freezing conditions during the dewatering sequence. After most of the water is removed during the first dewatering cycle, subsequent cycles pull air through the interstitial spaces of the media and the loss of heat due to evaporation can depress the temperature on surface of the media and dewatering filters below ambient temperature.

A. Follow guidance in the vendor documentation for the process in use

B. If no other guidance is provided, dewatering should not be performed unless ambient temperature of air entering the liner is 40 degrees Fahrenheit or higher (FO-OP-022)

11.3.2.3 Ensure final water collection sample point is representative (e.g., as close as possible to the pump discharge)

11.3.3 Mixed Media: Additional guidance for dewatering liners containing Mixed Media with significant non media solids using a PCP for direct disposal at Barnwell (PIP O-03-0624 CAPR)

The guidance below applies to liners containing combinations of different media with significant quantities of non media solids (e.g., spent zeolite, carbon, resin, etc. containing filtered particulate)

11.3.3.1 Require Ecodex filter system in all liners that contain mixed media with significant non-media solids

11.3.3.2 Clearly specify media loading sequence if media is not homogeneously mixed to minimize potential blinding of the lowest level of filters. (e.g., for layered media, largest diameter media in the bottom of the liner)

11.3.3.3 Require additional dewatering Cycles (e.g. minimum of 3 additional cycles after the acceptance criteria in the vendor procedure have been met)

11.3.3.4 Require longer settling periods during the additional dewatering cycles (e.g., 24 hours instead of the 16 hours required in the vendor procedure)

11.3.3.5 Require dewatering through bottom 2 laterals during liner filling (Topical Report requirement to establishes proper media compaction and capillary conditions)

11.3.3.6 Require initial liner unwatering upon completion of final waste transfer to liner (e.g., dewater to loss of vacuum in bottom dewatering laterals to establish capillary dewatering conditions)

11.4 Dewatering Process Requirements

The procedures directing dewatering processes shall address all of the following activities that apply to the specific waste type being dewatered.

11.4.1 Waste Characterization

Dewatering procedures shall describe how each type of waste is characterized. The characterization information determines what disposal and container requirements apply and may also be utilized to determine shipment packaging requirements (e.g., shielding). Much of the required information for slurried waste is obtained using a representative sample of the waste media. Characterization requires the following types of information:

11.4.1.1 Radioactivity content

A. To determine 10CFR61 waste class, form and container requirements

B. To provide waste content characterization for packaging and disposal requirements

11.4.1.2 Waste compatibility with disposal container and process method

A. Chemical Compatibility: Process knowledge can be applied to determine chemical compatibility with the container.

B. Hazardous Characteristics: Process knowledge can be applied to determine if the waste is a Mixed Waste.

C. If process knowledge is uncertain due to a potential input of incompatible or hazardous materials, then chemical analysis using an approved method shall be performed to determine chemical compatibility or hazardous characteristics.

11.4.2 PCP process parameters shall be identified in implementing procedures. Typical parameters are:

11.4.2.1 Waste form

11.4.2.2 Settling time

11.4.2.3 Drain (or pump) time

11.4.2.4 Drying time

11.4.2.5 Specific activity

11.4.3 PCP boundary conditions shall be established for applicable process parameters to verify FSL threshold limits are met.

11.4.4 Sample analysis results and boundary conditions shall be reviewed by the appropriate knowledgeable individual responsible for the dewatering process.

11.4.5 Actual dewatering shall be performed using approved procedures that ensure the process is performed within the established boundary conditions.

11.5 Product Verification

The amount of free-standing liquid shall be verified to be within disposal site criteria for each container of dewatered waste prior to disposal (e.g., 10CFR61 requires that each container shall have less than 0.5% free-standing liquids by waste volume or less than 1.0% free-standing liquid if a High Integrity Container (HIC) is used).

11.5.1 PCP Verification

Verification may be accomplished by documenting that the Process Control Program was followed.

11.5.2 Non PCP Verification (SLC Remedial Action Requirements, PIP O-02-7159)

If the PCP was not followed or a non process control method is used:

11.5.2.1 Reprocess the waste in accordance with PCP requirements using an onsite process or approved offsite vendor process, OR

11.5.2.2 Use physical testing of the final dewatered product container to verify that the free-standing liquid content meets disposal site requirements. Physical testing shall be based on a process approved by the appropriate regulator, disposal site operator, or applicable disposal site requirements document.

A. A disposal site may define a product verification testing method approved for use in lieu of a process control method.

1. That approved product verification process may be used for that category of disposal on a case-by-case basis, (e.g., bulk waste non-containerized disposal).

2. Any such product verification process shall be approved by the Nuclear GO Chemistry and Radiation Protection groups.

B. Physical testing may include actual measurement of the volume of FSL in each container as follows:

1. Puncture the bottom of the dewatered disposal container and collect the FSL.

2. Measure the collected FSL and verify it meets the disposal site requirements.

3. Punctured containers shall be repaired in order to meet all applicable regulatory and disposal site requirements prior to disposal.

11.5.2.3 Documentation of the method used for product verification and the results shall be included in the dewatering record as described in the Dewatering Record Retention section below.

11.5.2.4 Make programmatic changes as necessary to address any problems identified.

11.5.3 Off-normal process or container conditions

If any off-normal condition existed during processing that could invalidate boundary conditions the following guidance applies:

11.5.3.1 Reprocess the waste in accordance with PCP requirements using an onsite process or approved offsite vendor process, OR

11.5.3.2 Contact the process vendor for technical guidance. The vendor may be able to provide a contingency process to meet disposal requirements. The following examples may be considered:

A. If a dewatering lateral in a container fails to meet the process variable boundary requirement in the dewatering procedure, the vendor may be able to provide procedural guidance to successfully complete the dewatering

B. If a contingency dewatering process cannot be successfully completed refer to the dewatering failures guidance below

11.5.3.3 Make programmatic changes as necessary to address any problems identified

11.5.4 Dewatering verification failures (SLC Remedial Action Requirements)

11.5.4.1 Any dewatered vessel failing the product verification requirements shall not be shipped to a burial site until reprocessing or repackaging has resulted in an acceptable product.

11.5.4.2 If applicable regulatory requirements for a dewatered waste container are not satisfied, the following actions shall be taken prior to next shipment of dewatered wastes for disposal:

A. Suspend shipments of defectively packaged/inadequately processed radioactive wastes from the site AND

B. Initiate action to correct the PCP, procedures, or solid waste equipment as necessary to prevent recurrence.

C. If the process is a vendor process, obtain technical guidance from the vendor in resolving the problem

D. The reprocessing of a failed dewatering may be accomplished using an onsite process or approved offsite vendor process

11.6 Inoperable Equipment (SLC Remedial Action Requirements)

With the waste dewatering equipment incapable of meeting PCP requirements or not in service:

11.6.1 Restore the equipment to operable status, OR

11.6.2 Provide alternative capability as necessary to process wastes per this PCP

11.7 Dewatering Document Retention

Dewatering records shall be maintained on each vessel of dewatered waste as described in section 7.5 of the Corporate PCP and section 5.5 of APPENDIX F "Administration of the PCP and Support Documents". All of the following records that are applicable should be included:

11.7.1 Sample analysis and boundary conditions

11.7.2 Dewatering record from completed Nuclear Generation or vendor dewatering procedures

11.7.3 Free-standing liquid verification

RADIOACTIVE WASTE PROCESS CONTROL PROGRAM MANUAL

APPENDIX A

OCONEE NUCLEAR STATION PROCESS CONTROL PROGRAM

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RADIOACTIVE WASTE
PROCESS CONTROL PROGRAM MANUAL

APPENDIX A

OCONEE NUCLEAR STATION
PROCESS CONTROL PROGRAM

REVISION NUMBER	ISSUE DATE
12	3/26/03

Prepared by/ Date: DL Vaught/ 12/12/02
NGO Chemistry

Review by/ Date: GT Johnson/ 12/16/02
NGO Radiation Protection

OCONEE REVIEW AND APPROVALS

Reviewed By/ Date:

AS Breland/ 1/6/03

ONS Radwaste Chemistry

Reviewed By/ Date:

RA Bowser/ 1/6/03

ONS Radiation Protection

Approved By/ Date

BL Norris/ 1/8/03

ONS Chemistry Manager

Approved By/ Date

BH Hamilton/ 1/9/03

ONS Station Manager

Issued By: RW Eaker (Acting)/ 1/21/03
Technical Manager, Nuclear Chemistry

APPENDIX A

OCONEE NUCLEAR STATION PROCESS CONTROL PROGRAM

1. PURPOSE

The Oconee Nuclear Station (ONS) Process Control Program (PCP) lists the documents used to implement all applicable requirements of the Corporate Process Control Program for each container of solidified radioactive or mixed waste and dewatered radioactive waste shipped for burial at a licensed burial facility. This PCP is applicable only to the solidification or dewatering of liquid or wet solid radioactive waste.

2. COMPOSITION

The ONS PCP consists of:

- A title page documenting approval of changes to the ONS Process Control Program per Appendix E of the PCP Manual
- A list of all the procedures used at ONS that implement the requirements of the Corporate Process Control Program
- Oconee Nuclear Station diagrams, drawings or drawing numbers showing interfaces between ONS radwaste systems and solidification and dewatering equipment
- Exceptions to the Corporate PCP section

3. IMPLEMENTING PROCEDURES

3.1 CP/0/B/5200/048 “Resin Recovery System Operation”

3.2 CP/0/B/5400/001 “RW Dewatering and Operating Guidelines”

3.3 SH/0/B/2004/002 “Preparation and Shipment of Radioactive Wastes”

3.4 TC/0/B/5400/001 “CNSI Procedure for Dewatering in PL8-120FEXM High Integrity Container”

APPENDIX A

OCONEE NUCLEAR STATION
PROCESS CONTROL PROGRAM

4. DRAWING INDEX

All system interfaces are shown on diagrams or described in the applicable station procedure.

5. EXCEPTIONS TO THE CORPORATE PCP SECTION

None

RADIOACTIVE WASTE PROCESS CONTROL PROGRAM MANUAL

APPENDIX B

McGUIRE NUCLEAR STATION PROCESS CONTROL PROGRAM

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RADIOACTIVE WASTE
PROCESS CONTROL PROGRAM MANUAL

APPENDIX B

McGUIRE NUCLEAR STATION
PROCESS CONTROL PROGRAM

REVISION NUMBER	ISSUE DATE
17	_1/6/05__

Prepared by/ Date: _DL Vaught/ 12/8/04_ NGO Chemistry

Review by/ Date: _GT Johnson/_12/8/04_____ _ NGO Radiation Protection

McGUIRE REVIEW AND APPROVALS

Reviewed By/ Date:

__JC Gabbert/ 12/16/04___

MNS Radwaste Chemistry

Reviewed By/ Date:

__RE Beckham/ 12/15/04 ___

MNS Radiation Protection

Approved By/ Date

__JJ Nolin/ 12/16/04___

MNS Chemistry Manager

Approved By/ Date

_TP Harrall/ 12/17/04__

MNS Station Manager

Issued By: _DP Rochester/ 1/5/05_____

Technical Manager, Nuclear Chemistry

APPENDIX B

McGUIRE NUCLEAR STATION PROCESS CONTROL PROGRAM

1. PURPOSE

The McGuire Nuclear Station (MNS) Process Control Program (PCP) lists the documents used to implement all applicable requirements of the Corporate Process Control Program for each container of solidified radioactive or mixed waste and dewatered radioactive waste shipped for burial at a licensed burial facility. The PCP is applicable only to the solidification or dewatering of liquid or wet solid radioactive waste.

2. COMPOSITION

The MNS PCP consists of:

- A title page documenting approval of changes to the MNS Process Control Program per Appendix E of the PCP Manual
- A list of all the procedures used at MNS that implement the requirements of the Corporate Process Control Program
- McGuire Nuclear Station diagrams, drawings or drawing numbers showing interfaces between MNS radwaste systems and solidification and dewatering equipment
- Exceptions to the Corporate PCP section

3. IMPLEMENTING PROCEDURES

3.1 CP/0/B/8600/011 “Sampling Batching Tank and Resin Sample Preparation”

3.2 SH/0/B/2004/002 “Preparation and Shipment of Radioactive Waste”

3.3 HP/0/B/1004/012 “Utilization of Polyethylene High Integrity Overpacks”

3.4 HP/0/B/1004/032 “Procedure for Packaging Radioactive Filters”

3.5 OP/0/A/6200/032 “Solid Waste System Operation”

3.6 OP/0/B/6200/064 “Transfer and Dewatering Bead Resin”

3.7 OP/1/B/6200/102 “Unit 1 CM Backwash Tank Operation”

3.8 OP/2/B/6200/102 “Unit 2 CM Backwash Tank Operation”

3.9 OP/1/B/6700/016 “Operating Unit 1 Steam Generator Blowdown Demineralizers”

APPENDIX B

McGUIRE NUCLEAR STATION
PROCESS CONTROL PROGRAM

3.10 OP/2/B/6700/016 "Operating Unit 2 Steam Generator Blowdown Demineralizers"

4. DRAWING INDEX

Plant Interfaces:

4.1 MC-1100-01.02

4.2 MC-1566-1.0

4.3 MC-1566-1.1

4.4 MC-1566-2.0

4.5 MC-1566-3.0

4.6 MC-1590-1.3

4.7 MC-1604-1.1

All system interfaces are shown on diagrams or described in the applicable station procedure.

5. EXCEPTIONS TO THE CORPORATE PCP SECTION

None

RADIOACTIVE WASTE PROCESS CONTROL PROGRAM MANUAL

APPENDIX C

CATAWBA NUCLEAR STATION PROCESS CONTROL PROGRAM

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RADIOACTIVE WASTE
PROCESS CONTROL PROGRAM MANUAL

APPENDIX C

CATAWBA NUCLEAR STATION
PROCESS CONTROL PROGRAM

REVISION NUMBER	ISSUE DATE
11	1/6/05

Prepared by/ Date: DL Vaught/ 12/7/04
NGO Chemistry

Review by/ Date: GT Johnson/ 12/7/04
NGO Radiation Protection

CATAWBA REVIEW AND APPROVALS

Reviewed By/ Date:

CD Williams/ 12/9/04
CNS Radwaste Chemistry

Reviewed By/ Date:

BN Kimray/ 12/7/04
CNS Radiation Protection

Approved By/ Date

FK Smith/ 12/14/04
CNS Chemistry Manager

Approved By/ Date

RM Glover/ 12/19/04
CNS Station Manager

Issued By: DP Rochester/ 1/5/05
Technical Manager, Nuclear Chemistry

APPENDIX C

CATAWBA NUCLEAR STATION PROCESS CONTROL PROGRAM

1. PURPOSE

The Catawba Nuclear Station (CNS) Process Control Program (PCP) lists the documents used to implement all applicable requirements of the Corporate Process Control Program for each container of solidified radioactive or mixed waste and dewatered radioactive waste shipped for burial at a licensed disposal facility. The PCP is applicable only to the solidification or dewatering of liquid or wet solid radioactive waste.

2. COMPOSITION

The CNS PCP consists of:

- A title page documenting approval of changes to the CNS Process Control Program per Appendix E of the PCP Manual
- A list of all the procedures used at CNS that implement the requirements of the Corporate Process Control Program
- Catawba Nuclear Station diagrams, drawings or drawing numbers showing interfaces between CNS radwaste systems and solidification and dewatering equipment
- Exceptions to the Corporate PCP section

3. IMPLEMENTING PROCEDURES

3.1 OP/1/B/6250/016 “Condensate Polishing Demineralizer Backwash Tank Subsystem - Unit 1"

3.2 OP/2/B/6250/016 “Condensate Polishing Demineralizer Backwash Tank Subsystem - Unit 2"

3.3 OP/0/B/6500/111 “Operating Procedure for the Nuclear Solid Waste (WS) Disposal System” (PIP C-04-2308)

3.4 OP/0/B/6500/046 “Radwaste Operating Procedure for Solidification and Dewatering of Radioactive Waste”

3.5 OP/0/B/6500/069 “Chemistry Operating Procedure for Monitor Tank Building (MTB) Ion Exchange and Filtration Media Operations”

3.6 SH/0/B/2004/002 “Preparation and Shipment of Radioactive Waste”

APPENDIX C

CATAWBA NUCLEAR STATION PROCESS CONTROL PROGRAM

3.7 OP/0/B/6500/082 "Dewatering Secondary Contaminated Resin"

4. DRAWING INDEX

Plant Interfaces:

4.1 CN-1566-1.6

4.2 CN-1565-3.2

All system interfaces are shown on diagrams or described in the applicable station procedure.

5. EXCEPTIONS TO THE CORPORATE PCP SECTION

None

RADIOACTIVE WASTE PROCESS CONTROL PROGRAM MANUAL

APPENDIX D Rev. 1

APPROVED SUPPLIERS OF PCP SERVICES

Prepared By/ Date:	Reviewed By/ Date:
_DL Vaught/_3/18/04_____	___GT Johnson/_3/23/04_____
NGO Radwaste Support	NGO Radiation Protection
Approved By/ Date:	
___DP Rochester/_3/23/04_	
Technical Manager, Nuclear Chemistry	

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APPENDIX D
APPROVED SUPPLIERS OF PCP SERVICES

SUPPLIER QUALIFICATIONS

1. EVALUATION AND PREAPPROVAL

The radwaste vendors listed in the qualified supplier table have met the following requirements:

1.1 They have obtained approval per the processor technical evaluation as outlined in Appendix G "Waste Processor Checklist" of the PCP Manual

1.2 They have been approved for incorporation into the Nuclear QA Approved Supplier Program

2. SERVICE CONTRACT REQUIREMENTS

Radwaste vendors in the QA approved supplier program are required to meet the applicable quality requirements set forth in the purchase order governing their service contract.

Examples of such requirements are:

2.1 Supplier shall provide dewatering and/or solidification activities that meet disposal requirements of a qualified disposal site in accordance with 10 CFR Part 61 - 'Licensing Requirements for Land Disposal of Radioactive Waste'.

2.2 Suppliers shall meet the applicable requirements of:

- 10 CFR 20 - Standards For Protection Against Radiation,
- 10 CFR part 71 - Packaging And Transportation Of Radioactive Material, and
- 49 CFR chapter I Subchapter C - Hazardous Materials Regulations

2.3 Supplier shall satisfy applicable requirements of the certificates of compliance for high integrity containers and shipping packages provided.

2.4 Must provide to Duke Energy corporate radwaste staff controlled copies of current revisions of applicable procedures for handling & dewatering NRC approved HICs. (Duke Energy 526 South Church St. Mail Code EC07D Charlotte, NC 28202)

2.5 For waste dewatered or solidified to meet 10CFR61 waste form requirements at the vendor's facility, copies of approved completed PCP procedures documenting compliance with PCP requirements shall be provided to the customer site prior to disposal of the final waste container. Solidification PCP documentation shall include the verification of successful laboratory scale test solidification as required in this Duke Energy PCP.

2.6 Any failure of PCP test solidification and corrective measures taken shall be communicated to the customer site prior to performing the final full scale solidification.

APPENDIX D
APPROVED SUPPLIERS OF PCP SERVICES

QUALIFIED SUPPLIERS				
VENDOR NAME	**SOLIDIFICATION**	**DEWATERING**	**MIXED WASTE**	**COMMENTS**
Duratek (Chem-Nuclear)	Solidification Services - Mobile Cement Solidification System, Ref: Topical Report CNSI-2 (4313-01354-01P-A). Approved waste streams: 1. boric acid evaporator concentrates 2. spent bead resin 3. spent powdered resin 4. filters 5. filter backwash slurry 6. resin regenerative chemical wastes 7. sludges	Dewatering Services – Ref: Topical Report CNSI-DW-11118-01. Approved Media: 1. granular media 2. bead ion exchange resin 3. zeolite 4. activated carbon (course particle size, GAC 40) 5. pre-coat media: a. Ecodex™ b. Powdex™ c. Epifloc™ d. Solka -floc™ and/or diatomaceous earth 6. Other media requires Duratek prior approval	Duratek may be used to process this type of waste by solidification to render it non-hazardous as described in the Duke Energy Corporate PCP. 1. All other solidification requirements in this Process Control Program shall be met. 2. A description of the treatment process and results of the analytical tests of the final waste, using the Toxicity Characteristic Leaching Procedure required by 40CFR261.24, shall be reviewed by Duke Energy and Chem-Nuclear Systems, Inc. prior to shipment.	Envirostone solidification compound, manufactured by U.S. Gypsum, has been approved by Chem-Nuclear Systems, Inc. (Duratek) and Duke Energy for solidification of specific Class A unstable wastes that are characteristic mixed wastes. This waste may be treated by in-house personnel using this media in compliance with this Process Control Program. The media shall not contain more than one percent oil by volume.

APPENDIX D
APPROVED SUPPLIERS OF PCP SERVICES

VENDOR NAME	PROCESS, REHYDRATE & PACKAGE SPENT RESIN AND PROCESS MEDIA	COMMENTS
Studsvik	Approved for Volume Reduction of Spent Resin and Process Media using the Steam Reformation process. Process includes the rehydration of the Steam Reformed residue to render it non-dispersible for disposal in a HIC using the Studsvik PCP. The final package is approved for disposal at a 10CFR61 disposal site or for storage.	The Studsvik Thor process residue was approved by SC DHEC for disposal at Barnwell, SC in a memo dated 10/13/98. The approved product is a Steam Reformed dry product rendered non–dispersible by adding a water-based wetting agent. The rehydration is controlled by the Studsvik PCP that assures the final product meets disposal site FSL requirements. Ref: Studsvik procedure OP-011: "Residue Packaging PCP"

RADIOACTIVE WASTE PROCESS CONTROL PROGRAM MANUAL

APPENDIX E Rev. 0

PCP MANUAL REVIEW AND APPROVAL REQUIREMENTS

Prepared By/ Date:	Reviewed By/ Date:
DL Vaught/ 12/16/02 NGO Radwaste Support Staff	GT Johnson/ 12/18/02 NGO Radiation Protection
Approved By/ Date: PW Downing/ 12/30/02 Technical Manager, Nuclear Chemistry	

NEDL SDQA "C"

APPENDIX E
PCP MANUAL REVIEW AND APPROVAL REQUIREMENTS

Title	Technical Author & Review	Approvals
CORPORATE PROCESS CONTROL PROGRAM	NGO Chemistry Author NGO Radiation Protection Station Chemistry Staff Station Radiation Protection	NGO Chemistry Technical Manager All Sites Chemistry Managers All Station Managers
APPENDIX A: OCONEE NUCLEAR STATION PROCESS CONTROL PROGRAM	NGO Chemistry Author NGO Radiation Protection Staff ONS Chemistry ONS Radiation Protection	NGO Chemistry Technical Manager ONS Chemistry Manager ONS Station Manager
APPENDIX B: McGUIRE NUCLEAR STATION PROCESS CONTROL PROGRAM	NGO Chemistry Author NGO Radiation Protection MNS Chemistry MNS Radiation Protection	NGO Chemistry Technical Manager MNS Chemistry Manager MNS Station Manager
APPENDIX C: CATAWBA NUCLEAR STATION PROCESS CONTROL PROGRAM	NGO Chemistry Author NGO Radiation Protection CNS Chemistry CNS Radiation Protection	NGO Chemistry Technical Manager CNS Chemistry Manager CNS Station Manager
APPENDIX D: Approved Suppliers of PCP Services	NGO Chemistry Author NGO Radiation Protection	NGO Chemistry Technical Manager
APPENDIX E: PCP Manual Review & Approval Requirements	NGO Chemistry Author NGO Radiation Protection	NGO Chemistry Technical Manager
APPENDIX F: Administration of the PCP & Support Documents	NGO Chemistry Author NGO Radiation Protection	NGO Chemistry Technical Manager All Sites Radwaste Chemistry
APPENDIX G: Waste Processor Checklist	NGO Radiation Protection NGO Chemistry Author	N/A
APPENDIX H: Revision Summary - Licensee Initiated Changes	NGO Chemistry Author	N/A

RADIOACTIVE WASTE PROCESS CONTROL PROGRAM MANUAL

APPENDIX F

ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS

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RADIOACTIVE WASTE
PROCESS CONTROL PROGRAM MANUAL

APPENDIX F

ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS

REVISION NUMBER	ISSUE DATE
0	3/26/03

Prepared by/ Date: DL Vaught/ 3/14/03 — NGO Radwaste Staff

Review by/ Date: GT Johnson/ 3/17/03 — NGO Radiation Protection

CATAWBA	MCGUIRE	OCONEE
Approved By/Date	Approved By/Date	Approved By/Date
CD Williams/ 3/19/03	JC Gabbert/ 3/17/03	GP Denard/ 3/19/03
Radwaste Chemistry	Radwaste Chemistry	Radwaste Chemistry

Issued By: DP Rochester/ 3/20/03

Technical Manager, Nuclear Chemistry

APPENDIX F
ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS

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2.4 NSD 703 "Administrative Instructions for Station Procedures" 1

2.5 NSD 704 "Technical Procedure Use and Adherence" 1

2.6 NSD 209 "10 CFR 50.59 Evaluations" 1

2.7 NSD 319 "Vendor Technical Information (VTI) Program" 1

2.8 NSD 702 "Document Management" 1

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2.10 NSD 301 "Nuclear Station Modifications" 1

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APPENDIX F
ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS

1. PURPOSE

This document describes the administrative process for the Radioactive Waste Process Control Program (PCP) Manual and its supporting documents. These include but are not limited to documents used to accomplish the requirements of the PCP. (e.g., nuclear station implementing procedures, Radwaste vendor documents, etc.) It is intended to facilitate compliance with applicable Nuclear Generation Department (NGD) administrative procedures, Nuclear System Directives (NSD) and provide details of the process that are not described in those documents. This document also contains a description of the Electronic publication processes for the PCP and the vendor documents used to implement the PCP. It is referenced in the SDQA plan for the PCP Manual.

2. REFERENCES

2.1 Duke Energy Corporation Quality Assurance Program Topical Report

2.2 Nuclear Policy Manual Chapter 2

2.3 Nuclear System Directive (NSD) 100 "Instructions for Administrative Procedures"

2.4 NSD 703 "Administrative Instructions for Station Procedures"

2.5 NSD 704 "Technical Procedure Use and Adherence"

2.6 NSD 209 "10 CFR 50.59 Evaluations"

2.7 NSD 319 "Vendor Technical Information (VTI) Program"

2.8 NSD 702 "Document Management"

2.9 NSD 800 "Software and Data Quality Assurance"

2.10 NSD 301 "Nuclear Station Modifications"

2.11 Corporate Process Control Program

2.12 Chapter 16 FSAR "Selected Licensing Commitments"

2.13 Procedure Writer's Manual

APPENDIX F
ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS

3. DEFINITIONS AND DESCRIPTIONS

3.1 Safety Analysis Report (SAR)

The station's technical specifications, updated final safety analysis report, licensee commitments, safety evaluation reports and the facility operating license.

3.2 Selected Licensing Commitments (SLC)

Commitments to control important plant equipment and operating conditions not controlled elsewhere. Operational commitments which are to be removed from existing station Technical Specifications (Tech Specs) may be included in the SLC program. Also included in this program can be selected NRC commitments contained in licensing documents such as the station's SERs, LERs, violation responses, generic letter and bulletin responses, submittal documents and other Duke letters to the NRC.

3.3 10CFR Part 61 "Licensing Requirements for Land Disposal of Radioactive Waste"

The applicable portion of this NRC regulation requires that low-level radioactive waste (LLW) meet certain waste form acceptance criteria in order to be received for disposal at NRC and Agreement State licensed radioactive waste disposal sites.

3.4 Approved Radwaste Vendor/ QA Approved Supplier

Vendors that provide dewatering or solidification processes shall be evaluated against Duke Energy PCP requirements for approval. Approved vendors are incorporated into the Supply Chain QA Approved Supplier Program as described in Corporate PCP. Vendors offer the following kinds of services and products:

3.4.1 Turnkey onsite service contracts including their transportable equipment and operators for the equipment

3.4.2 Offsite intermediate processing of radwaste including packaging, shipping and final disposal at a licensed disposal site or return for disposition by the customer

3.4.3 Disposal containers and controlled copies of the associated documents and procedures for dewatering the containers to PCP requirements

APPENDIX F
ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS

3.5 Radwaste Vendor Document

A document provided by a vendor whose process has been approved for PCP processing. In order to implement the requirements of the PCP, Nuclear Generation operating procedures are developed that contain the applicable requirements described in the PCP manual. When the dewatering or solidification process used is based on using a vendor developed process, or using vendor provided containers/components they are required to provide two types of documentation:

3.5.1 Documents that were used to evaluate the vendor's program compliance with NRC, State, disposal site and Duke Energy PCP requirements in order to approve them for PCP services AND

3.5.2 Controlled copies of operating procedures for the vendor's dewatering or solidification process that are used to develop and maintain the PCP implementing procedures at each of the sites

4. RESPONSIBILITIES FOR PCP RELATED DOCUMENTATION

4.1 Nuclear General Office (NGO) Chemistry (Nuclear Chemistry)

4.1.1 Radwaste Support of NGO Chemistry (NGO Radwaste) is responsible for administration of the PCP and its supporting documents

4.1.2 NGO Radwaste also manages and distributes the vendor documents used by site Chemistry to implement the PCP.

4.2 Station Chemistry

4.2.1 Station Radwaste Chemistry approves this section of the PCP Manual.

4.2.2 The assigned staff and responsible Chemistry General Supervisor are responsible for ensuring that the site PCP related documents are properly updated, maintained and used to meet the requirements of this section of the PCP Manual.

4.2.3 Members of Chemistry Management and Staff are responsible for ensuring that all Chemistry personnel properly use PCP related documents as described in this document.

4.2.4 Each qualified member of the Chemistry group is expected to verify and use the most current and properly reviewed documents to perform PCP activities.

APPENDIX F
ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS

4.3 NGO Radiation Protection (RP)

4.3.1 NGO RP is responsible for maintaining and distributing current vendor documents used by site RP Radioactive Materials Control (RMC) to manage the site radioactive materials handling, packaging and shipping programs.

4.3.2 NGO RP reviews this document and ensures applicable RP program documents comply with its requirements.

5. PROCEDURE

5.1 PCP Manual Revision and Review

5.1.1 PCP Manual revisions are prepared by NGO Radwaste.

5.1.2 The reviews and approvals required for the PCP are described in the Radioactive Waste PCP APPENDIX E "PCP MANUAL REVIEW AND APPROVAL REQUIREMENTS".

5.1.3 All changes to the PCP and a description of the revisions shall be sent to the Nuclear Safety Review Board (NSRB). (Ref: 3.3.1 "SLC 16.13.2")

5.1.4 All changes to the Corporate PCP or station PCPs shall be sent to the NRC in each station's Annual Radioactive Effluent Report for the period in which the changes were implemented. This requirement is found in the following references:

5.1.4.1 NUREG-1431 "Standard Technical Specifications Westinghouse Plants"

5.1.4.2 NUREG-1430 "Standard Technical Specifications Babcock and Wilcox Plants"

5.1.4.3 Oconee Technical Specification 5.6.2 "Annual Radiological Environmental Operating Report"

5.1.4.4 Catawba SLC 16.11-16 "Annual Radiological Environmental Operating Report and Radioactive Effluent Release Report"

5.1.4.5 McGuire SLC 16.11.17 "Radioactive Effluent Release Report"

APPENDIX F
ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS

5.1.5 Proposed PCP revisions shall be reviewed against Technical Specifications, all applicable NRC guidance, and all applicable hazardous waste management regulations to ensure all requirements of a Process Control Program have been addressed. Documents reviewed shall include at a minimum the applicable documents listed in sections 3 and 4 of the Corporate PCP.

5.2 PCP Manual Revision Record Retention Requirements

PCP records described in this section shall be retained in a retrievable form using an approved method as described in NSD 701 "Records Management" for a period of time no less than as defined in the referenced record number of the Information Retention Policy.

5.2.1 PCP Manual Revision Reviews & Approvals

Documentation of the reviews/ approvals and revisions of the following sections of the PCP Manual shall be retained for a period of time no less than as defined in the Information Retention Policy record # 006644.

- CORPORATE PROCESS CONTROL PROGRAM
- APPENDIX A "OCONEE NUCLEAR STATION PCP"
- APPENDIX B "MCGUIRE NUCLEAR STATION PCP"
- APPENDIX C "CATAWBA NUCLEAR STATION PCP"
- APPENDIX H "REVISION SUMMARY - LICENSEE INITIATED CHANGES"

5.2.2 A microfilm record of the historical PCP revision reviews/approvals through 2001 is stored in the vault on roll # 2096 per retention record # 006644. All revisions after 2001 shall be archived as described above.

5.3 PCP Manual Revision Publication Process

The PCP Manual is published for viewing in the NEDL Portal under Electronic Licensing Library (ELL). The PCP Manual files are viewable under the document subtype ODCM-PCP. The process for publication is summarized in ENCLOSURE 6.1 "PCP Manual Revision Publication Process".

5.4 Administration of Nuclear Generation Procedures for Implementing PCP Activities

5.4.1 Implementing procedures shall be established to ensure that all requirements for solidification or dewatering are met when performed by Nuclear Generation personnel.

APPENDIX F
ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS

5.4.2 The Nuclear Generation PCP implementing procedures are maintained per NSD 703 "Administrative Instructions for Technical Procedures". Revisions to all PCP implementing procedures shall be reviewed against the requirements in the PCP Manual to ensure that they do not conflict with the Corporate Process Control Program.

5.4.3 All PCP implementing procedures are identified in the station specific PCP contained in APPENDIX, A, B or C of the PCP Manual.

5.4.4 The PCP implementing procedures shall identify the fact that they are PCP related to ensure NSD 228 Applicability reviews consider the PCP requirements.

5.4.5 All revisions to procedures listed in the site PCPs shall be reviewed to determine if they alter or inhibit the procedure's performance of the Corporate PCP requirements.

5.4.6 NGO Radwaste is responsible for the interpretation and implementation of the PCP and shall be notified when any changes, deviations or questions concerning the interpretation of a requirement in the solidification or dewatering of a radioactive waste is encountered which may affect the Duke Energy Radioactive Waste Process Control Program Manual.

5.5 Retention Requirements for PCP Implementing Procedures

5.5.1 Chemistry PCP procedures shall document the Radioactive Shipment Record (RSR) number for each dewatered or solidified container to provide a cross reference in the Chemistry record to the RMC shipment record.

5.5.2 All completed Chemistry PCP procedures shall be sent to Master File for archival under retention code # 004928 entitled "Operating Procedures", Classification: QA Record.

5.5.3 Applicable documentation in Chemistry PCP procedures shall be forwarded to RMC for inclusion with the shipping and disposal paperwork.

5.5.4 Offsite vendor documentation of PCP compliance shall be returned to RMC (the site shipping contact) as described in the Purchase Order quality requirements.

5.5.5 PCP documentation from offsite PCP vendors shall be incorporated into the shipping record when applicable.

APPENDIX F
ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS

5.5.6 RMC shipment files (including PCP documentation either from Chemistry or vendor) shall be sent to Master file under the retention code # 000278 entitled "Radioactive Material Control Records", Classification: QA Record.

5.6 Use of Vendor Procedures in Chemistry Procedures

5.6.1 Technical review of all vendor documents and procedures pertaining to PCP processing shall be performed by knowledgeable station and NGO Chemistry staffs as described in Enclosure 6.3 "NSD 319 VTI Impact Assessment Process for Radwaste Vendor Documents Used in Chemistry".

5.6.2 Current revisions of vendor procedures that direct the use of vendor containers or processes for solidification or dewatering to meet PCP requirements are received per the vendor control document program and maintained as references for Nuclear Generation operating procedures.

5.6.3 The vendor procedure steps that direct PCP solidification or dewatering performed by station assigned individuals shall be incorporated into Nuclear Generation procedures and maintained in the technical procedure electronic repository for use by station personnel (e.g., NEDL/Scribe) as follows:

5.6.3.1 The vendor document is used as a reference.

5.6.3.2 The information from the vendor document is incorporated into the body and/or enclosures of the nuclear station implementing procedure.

5.6.3.3 The information is reformatted per the Procedure Writers Manual and NSD 703 except as described in 5.6.4.

5.6.3.4 The incorporation of vendor process information into the NEDL electronic procedure constitutes a technical procedure revision. per NSD 703 including NSD 228 Applicability Determination and QR approval.

5.6.4 Some vendor procedure enclosures that document compliance with the vendor process or container certification requirements is required to accompany the container during shipment and receipt at the disposal site. The following are two approaches that may be used to maintain the standardized formatting of the form:

APPENDIX F
ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS

5.6.4.1 These enclosures may be referenced in the Nuclear Generation procedure rather than being incorporated into the NEDL electronic procedure.

A. When performing solidification or dewatering activities, a working copy of the enclosure is printed from the current controlled copy of the vendor procedure and incorporated as an enclosure in the working copy of the Nuclear Generation procedure.

B. This approach precludes revisions to the nuclear station procedure every time the vendor enclosure is revised.

5.6.4.2 The vendor document enclosures may be incorporated into the Nuclear Generation procedure electronically while maintaining the original vendor format.

A. This approach will require that formatting conflicts with applicable Nuclear Generation Writer's Manual guidelines be addressed.

B. The incorporation of revised vendor information into the NEDL electronic procedure constitutes a technical procedure revision per NSD 703, including NSD 228 Applicability Determination and QR approval.

5.7 Exclusion of Vendor Procedures from NSD 228 "Applicability Determination"

5.7.1 The vendor documents used to support PCP activities are exempted from the requirements of NSD 228 and NSD 703 per 703.1, subsection 5. "Procedures for Site Equipment NOT Installed".

5.7.2 Applicability Determination (NSD 228), review, and approval under the site program are not required for the Radwaste vendor procedures or any subsequent revisions if all of the following criteria are met:

5.7.2.1 The Radwaste vendor procedures are from a QA approved vendor.

5.7.2.2 The procedures direct activities of QA approved vendors or site assigned personnel that do NOT involve direct work on plant installed equipment.

5.7.2.3 The vendor dewatering and solidification procedure addresses activities that could be performed off-site.

5.8 Chemistry Control of PCP Related Vendor Documents

5.8.1 PCP related controlled vendor documents are distributed to NGO Radwaste per the vendor controlled document process.

5.8.2 NGO Radwaste is the Nuclear Generation Chemistry recipient for all Radwaste vendor documents used in PCP implementing Chemistry procedures.

5.8.3 Hard copies of controlled vendor documents are maintained as received in a Nuclear Generation Satellite File located in the NGO Chemistry area.

5.8.4 When NGO Radwaste receives vendor document revisions, they are distributed as described in Enclosure 6.2 "Chemistry Process for Publication of PCP Related Vendor Documents".

5.8.5 All PCP related vendor document revisions are reviewed by NGO Radwaste to determine their impact on Nuclear Generation Chemistry programs and procedures.

5.8.6 Radwaste vendor documents that are incorporated into Nuclear Generation Chemistry PCP implementing procedures are subjected to a vendor technical impact assessment as described in Enclosure 6.3 "NSD 319 VTI Impact Assessment Process for Radwaste Vendor Documents Used in Chemistry".

6. ENCLOSURES

6.1 PCP Manual Revision Publication Process

6.2 Chemistry Distribution of Radwaste Vendor Documents

6.3 NSD 319 VTI Impact Assessment Process For PCP Related Vendor Documents Used In Chemistry

APPENDIX F

ENCLOSURE 6.1
"PCP Manual Revision Publication Process"

6.1 PCP Manual Revision Publication Process

The PCP Manual is published for viewing in the NEDL Portal under ELL. The PCP Manual files are stored under the document subtype ODCM-PCP in an approved read-only format (e.g., PDF). The following process is used to publish the PCP Manual and ensure SDQA requirements are met:

6.1.1 PCP Manual Word File Management

The PCP Word document files are managed in a secure server location (//ngofs1/Chemgo) using the following subfolders:

- "Current PCP Word Files" Contains the current revision of the PCP Manual Word files
- "Revision PCP Word Files" Contains the Word files under revision (i.e., the "revision" Word files)
- "Archive PCP Word Files" Contains superseded revisions of PCP Word files
- "Current PCP PDF Files" Contains copies of the current PDF files published for viewing in the NEDL Portal
- "Revision PCP PDF Files" Contains the PDF files under revision (i.e., the "revision" PDF files)
- "Archive PCP PDF Files" Contains copies of superseded PDF files

6.1.2 PCP Manual Revision and Publication Process

6.1.2.1 Copy the current PCP Word file to the subdirectory, "Revision PCP Word Files" when editing is needed

6.1.2.2 This revision file shall be named to differentiate it from the current file

6.1.2.3 Edit the revision PCP Word file

APPENDIX F

ENCLOSURE 6.1
"PCP Manual Revision Publication Process"

6.1.2.4 Covert revision PCP Manual Word files to PDF files in the "Revision PCP PDF Files" subfolder with internal TOC links in the following sections:

- Corporate PCP
- APPENDIX F "ADMINISTRATION OF THE PCP AND ASSOCIATED DOCUMENTS"

6.1.2.5 Route the revision PDF for the required reviews and approvals

A. Email the instructions for review and approval

B. Include the revision PDF as an attachment OR

C. Include instructions for accessing the file on the Intranet

6.1.2.6 Have reviewers and approvers respond via email with their "approval" or comments

6.1.2.7 After all changes are approved, edit the signature page in the revision Word files with approver "Names/ Dates" and "Issued Dates"

6.1.2.8 Create a PDF file of the title and approval page from each revised Word document

6.1.2.9 Insert the completed title and approval page into the appropriate revision PCP PDF file

6.1.2.10 Copy the current PCP PDF file into the "Archive PCP PDF Files" subfolder

6.1.2.11 Review the final PDF file containing the inserted title and approval page against the revision PDF file that was routed for review and approval to verify that only the approval "Names/ Dates" and "Issued Dates" entries changed

6.1.2.12 Save as final the revision PDF file with approval documentation in the "Current PCP PDF Files" subfolder.

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ENCLOSURE 6.1
"PCP Manual Revision Publication Process"

6.1.2.13 Save a copy the current Word file into the "Archive PCP Word Files" subdirectory

6.1.2.14 Save the final of the revision Word file in the "Current PCP Manual Word Files"

6.1.3 Adding a new PCP File to Scribe

6.1.3.1 Logon to Scribe Electronic Licensing Library (ELL)

6.1.3.2 Click the "New Document" icon in tool bar

6.1.3.3 Enter or select from the drop down menus the following information under "Document Properties" in the "Add Document" screen:

A. **Title:** "*Radioactive Waste PCP Manual: "PCP SECTION TITLE rev #"*

B. **Document Sub Type:** Select "*ODCM-PCP*"

C. **Status:** Select "*Current*"

D. **Doc Rev:** enter the current revision #

E. **Doc State:** Select "*Issued*"

F. **Unit:** Select the proper applicable initials for the PCP section. (e.g., since the Corporate PCP applies to all units at all three sites select "OCM")

G. **Section Name:** "*PCP SECTION TITLE*" (e.g., "*ONS PCP*")

H. **Document Date:** enter the "Issued" date for this revision (e.g., "*12/01/02*")

I. **Retention Record Number:** "*006644*"

J. **Author**: "*D"*

APPENDIX F

ENCLOSURE 6.1
"PCP Manual Revision Publication Process"

6.1.3.4 NGO Radwaste reviews the current PDF in NEDL Portal against the hard copy to verify all is correct

6.1.4 Revising an existing PCP Manual File in Scribe

6.1.4.1 Logon to Scribe Electronic Licensing Library

6.1.4.2 Checkout the current PCP Manual PDF file

6.1.4.3 Check in the revised PDF

6.1.4.4 Revise the "Document Property" values in the "Checkin Document" screen to reflect the changes (e.g., rev # in the Document Title, Document Date, Doc Rev #, etc.)

6.1.4.5 NGO Radwaste reviews the current PDF in NEDL Portal against the hard copy to verify all is correct

6.1.5 PCP Manual Revision and Approvals Record Retention

Transmit a hard copy of the following to NGO Document Support:

6.1.5.1 Verified current PDF

6.1.5.2 Email approvals

6.1.5.3 The appropriate transmittal form (e.g., Nuclear Work Request Transmittal Form) with the following information:

A. **Record/ Retention Title:** "*Process Control Program"*

B. **Retention #:** "*006644"*

C. **QA Condition:** "*N/A"*

APPENDIX F

ENCLOSURE 6.1
"PCP Manual Revision Publication Process"

D. **Document Title:** "*PCP Manual* – "Section Name" *rev # (ref: PCP Revision History – Rolling Frame # 2096)"*

NOTE: Rolling frame # 2096 contains the PCP historical record of revisions prior to 2002.

Example entry: "*PCP Manual-APPENDIX A ONS PCP rev 13 (ref: PCP Revision History – Rolling Frame # 2096*)"

E. Handwrite the "Document Title" information on the front of the hard copy (e.g., *"PCP Manual-APPENDIX A ONS PCP rev 13(ref: PCP Revision History – Rolling Frame # 2096*))

F. NGO Document Support films the hard copy of the PCP Manual section and the email approvals and sends the film to the vault

G. NGO Document Support adds the Microfiche reference information to the index in Scribe.

6.1.6 NSRB Review of PCP Manual Revisions

6.1.6.1 Each time a PCP Manual section is revised the NSRB shall review it.

6.1.6.2 Transmit a memo communicating what PCP Manual sections were revised and how to access the online manual to the NSRB through NGO Document Support.

6.1.6.3 NGO Document Support adds the transmittal information to the index in Scribe.

6.1.7 NGO Satellite File

Print out hard copy to place in the NGO Chemistry Satellite File

6.1.8 NRC Review of PCP Manual Revisions

PCP Manual revisions shall be sent to the NRC in each station's Annual Effluent Report each year. If no revisions occurred, a communication shall be

APPENDIX F

ENCLOSURE 6.1
"PCP Manual Revision Publication Process"

transmitted to Regulatory Compliance at each site documenting that no revisions occurred. During those years revisions do occur:

6.1.8.1 The transmittal shall be done in time to meet the May 1 deadline for the Annual Effluent Report.

6.1.8.2 The transmittal shall include a cover letter explaining the transmittal contents.

6.1.8.3 The transmittal shall include copies of all revisions to the PCP Manual effective during the report year using the media preferred by the NRC. (e.g., CD ROM, hard copy, etc.)

6.1.8.4 The transmittal shall include the current revisions of the following:

- The CORPORATE PCP
- The applicable site-specific PCP section, (i.e., APPENDIX A, B, or C) for each site
- APPENDIX D "APPROVED SUPPLIERS OF PCP SERVICES"
- APPENDIX E "PCP MANUAL REVIEW AND APPROVAL REQUIREMENTS"
- APPENDIX F "ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS"
- APPENDIX G "WASTE PROCESSOR CHECKLIST"
- APPENDIX H "REVISION SUMMARY - LICENSEE INITIATED CHANGES"
- Include a copy of all intermediate but superseded revised sections that were created during the report period as attachments for information.

6.1.8.5 NGO Document Support updates the Scribe index with the transmittal information.

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ENCLOSURE 6.2

"Chemistry Distribution of Radwaste Vendor Documents"

6.2 Chemistry Distribution of Radwaste Vendor Documents

6.2.1 Controlled Radwaste vendor documents are received by NGO Radwaste via the vendor document transmittal process.

6.2.2 Radwaste Vendor Document Review

6.2.2.1 The document is reviewed to determine the type of document and the revision scope

6.2.2.2 If it is a supporting document not referenced in Chemistry PCP implementing procedures,

A. It is reviewed for impact but no VTI impact assessment is done.

B. The Radwaste intranet home page index is updated and the controlled hard copy is placed in the NGO satellite file

C. If the change is significant the sites are notified of the change and a summary is provided. The new revision is made available in the appropriate location and the Radwaste intranet home page index is updated

D. If the change is not significant, the sites are not notified when the Radwaste intranet home page index is updated.

6.2.2.3 If the document is used or referenced in a PCP implementing procedure,

A. The sites are notified of the document revision and pending assessment in case planned or current field activities or operating procedure revisions could be impacted.

B. The NSD 319 VTI impact assessment is performed as described in Enclosure 6.3.

APPENDIX F

ENCLOSURE 6.2

"Chemistry Distribution of Radwaste Vendor Documents"

6.2.3 Radwaste Vendor Document Publication and Storage

6.2.3.1 All vendor documents received by Nuclear Chemistry are filed as hard copies in the GO Nuclear Chemistry Satellite File located in ECII 0745-59. The publication and archival of vendor documents are based on the categories below.

A. Vendor documents used in Nuclear Generation Chemistry PCP implementation procedures are published electronically in NEDL Miscellaneous Library and also filmed for archival under Retention Policy Record # 006644.

B. Radwaste Vendor documents that were used to approve a PCP vendor for the QA Approved Supplier List are not published but are filmed for archival under Retention Policy Record # 006644

C. Miscellaneous vendor documents that NGO Radwaste maintains for PCP QA, program & contract support are not published, but are filmed for archival under Retention Policy Record # 006644.

6.2.3.2 All Radwaste vendor documents on controlled distribution to Chemistry are listed in an index accessible from the NGO Radwaste Intranet home page. Vendor document numbers, titles and current revision numbers are displayed in the index on the NGO Radwaste intranet home page or via links on the home page

6.2.4 Radwaste Vendor Document Preparation for Electronic Publication

6.2.4.1 NGO Radwaste is responsible for distribution of Radwaste vendor documents for Chemistry use

6.2.4.2 Controlled Radwaste vendor documents are received by NGO Radwaste in hard copy format. To accomplish electronic distribution, an approved read-only electronic format (e.g., PDF) is created by one of the following methods:

A. Hard copies are scanned into an approved read-only electronic file format using a software application approved

APPENDIX F

ENCLOSURE 6.2

"Chemistry Distribution of Radwaste Vendor Documents"

for such use by the applicable Nuclear Generation administrative program, or

B. NGO Radwaste obtains electronic files from the vendor and the electronic files are converted to the approved read-only software application format.

6.2.4.3 Verify the read-only electronic file against the control hard copy. Document the verification date in the vendor document index on the NGO Radwaste intranet home page

6.2.5 Electronic publication on the intranet Radwaste Home Page,

6.2.5.1 Copy the verified read-only file to the appropriate server location

6.2.5.2 Update the backup intranet home page files in the test environment with the new link information.

6.2.5.3 Verify the intranet page in the test environment.

6.2.5.4 Transfer the verified files to the production environment and verify the page functionality.

6.2.5.5 Notify NGO Radwaste customers of the updates.

6.2.6 Electronic publication in NEDL,

6.2.6.1 Notify NGO Document Support of the revision.

6.2.6.2 NGO Document Support transitions the current NEDL revision of the read-only file to "WORK IN PROGRESS"

6.2.6.3 NGO Radwaste "Checks out" the file.

6.2.6.4 The new revision read-only file is "Checked In".

6.2.6.5 NGO Document Support transitions the current revision file to "REVISED" and the new revision file to "ISSUED".

6.2.6.6 NGO Radwaste is notified and the document view in NEDL is verified against the hard copy.

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ENCLOSURE 6.2

"Chemistry Distribution of Radwaste Vendor Documents"

6.2.7 Archival: Transmit a hard copy of the verified new revision to NGO Document Support with the appropriate transmittal form, (e.g., Micrographics Nuclear Work Request form) including the following information:

6.2.7.1 "Record/ Retention Title": *Process Control Program*

6.2.7.2 "Retention #": *006644*

6.2.7.3 "QA Condition": *N/A*

6.2.7.4 "Document Title": *PCP-XX-XX-XXX, Rev XX* ("PCP-" should precede the vendor assigned document number)

6.2.7.5 Handwrite the "Document Title" information on the front of the hard copy (e.g., "*PCP-FO-OP-023, Rev 20*")

6.2.7.6 NGO Document Support films the hard copy and sends the film to the vault

6.2.7.7 NGO Document Support adds the Microfiche reference info to the index in Scribe.

APPENDIX F

ENCLOSURE 6.3

"NSD 319 VTI Impact Assessment Process for PCP Related Vendor Documents Used In Chemistry"

6.3 NSD 319 VTI Impact Assessment Process for PCP Related Vendor Documents Used In Chemistry

6.3.1 Vendor Documents are received by NGO Radwaste

6.3.2 The document is reviewed and its applicability is determined

6.3.3 If the document is a supporting reference document that is not specifically used in the Nuclear Generation Chemistry operating procedures for dewatering wet wastes, the VTI assessment is not performed.

6.3.3.1 The procedure is reviewed to determine if the changes are significant enough to be communicated to the sites.

6.3.3.2 If the change is significant, the changes are summarized in a communication to the sites

6.3.3.3 If the changes are editorial or otherwise not significant, then the hard copy is placed into the NGO Radwaste controlled vendor document manual

6.3.3.4 The NGO Radwaste intranet home page index is updated per ENCLOSURE 6.2

6.3.4 If it is a procedure used in a Nuclear Generation Chemistry PCP implementation operating procedure, the VTI assessment is performed.

6.3.4.1 NGO Radwaste does a preliminary review of the procedure to determine how significant the changes are.

6.3.4.2 NGO Radwaste contacts the sites with the revision information and provides the preliminary review results

6.3.4.3 The sites each determine whether the changes appear significant and make a decision about placing the procedure on hold pending the VTI Assessment

6.3.4.4 NGO Radwaste creates the electronic file per ENCLOSURE 6.2

APPENDIX F

ENCLOSURE 6.3

"NSD 319 VTI Impact Assessment Process for PCP Related Vendor Documents Used In Chemistry"

6.3.4.5 The read-only file is made accessible per ENCLOSURE 6.2 and becomes the current revision for site to use

6.3.5 VTI Assessment Process Steps

6.3.5.1 Radwaste Support performs the VTI assessment for each of the sites using the guidance in NSD 319

6.3.5.2 The assessments for all three sites are documented in a summary document form created for this process.

6.3.5.3 A GO PIP is initiated to document the review summary. These PIPs have no corrective actions unless a revision to the PCP is required.

6.3.5.4 A site PIP is initiated for each site to review the VTI assessment and document each site's determination:

A. That procedure changes are not needed and no Corrective Actions are taken, OR

B. That a procedure change is needed and Corrective Actions are created accordingly to track the procedure change.

6.3.5.5 The DRAFT VTI file and the procedure file are transmitted via Email to the Radwaste PCP Subject Matter Expert (SME) and responsible General Supervisor at each site for their review and comments.

6.3.5.6 To edit the VTI file electronically and save the changes for NGO Radwaste to review, the file must be detached from the email:

A. The downloaded files are opened from the reviewer's hard drive to perform their assessment adding comments or changing answers in the draft VTI assessment file.

B. The file is saved and attached to an email & returned to NGO Radwaste.

APPENDIX F

ENCLOSURE 6.3

"NSD 319 VTI Impact Assessment Process for PCP Related Vendor Documents Used In Chemistry"

6.3.5.7 The review can be performed using a printed out copy

A. Launch the file and print from within the application

B. Review and red mark changes

C. Return to NGO Radwaste by fax at 382-3797 or

D. Interoffice mail to the NGO Radwaste person

E. Send an Email to NGO Radwaste indicating that the comments are en route

6.3.5.8 The reviewer can use an electronic or printed copy to review the files and then send summary comments via email.

6.3.6 If no changes are needed, an email is sent to Radwaste Support to document the site's concurrence with the assessment.

6.3.7 If changes or comments are added, the revised VTI files are used by NGO Radwaste for incorporation of SME answers and comments into the final version.

6.3.8 NGO Radwaste finalizes the VTI assessment form and updates the GO PIP to document the review summary and cross reference the site PIPs.

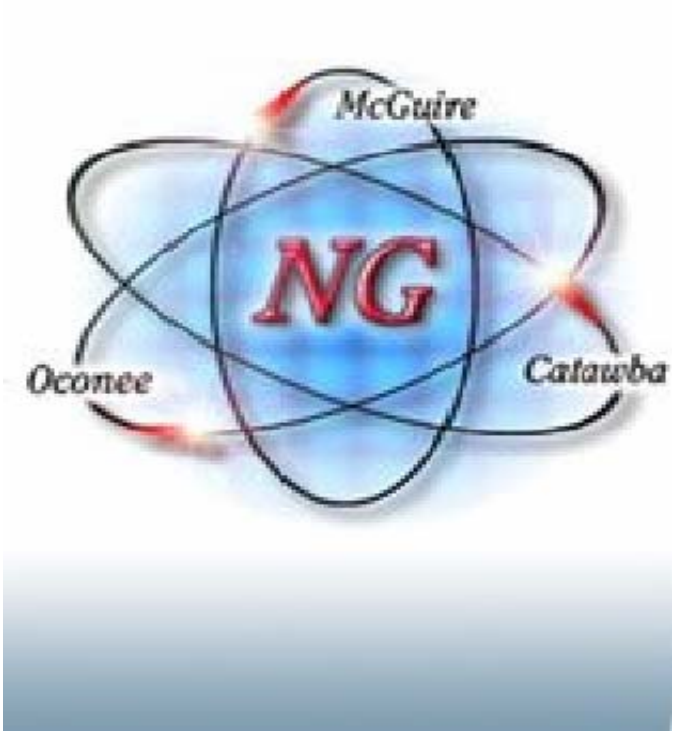
6.3.9 The VTI summary information is added to the NGO Radwaste intranet home page index.

6.3.10 The VTI file is made accessible via a link in the index on the intranet home page

6.3.11 The need for a procedure change is documented in the index on the intranet home page

6.3.12 PIP numbers are documented in the index on the intranet Radwaste Support home page for reference.

RADIOACTIVE WASTE PROCESS CONTROL PROGRAM MANUAL



APPENDIX G

WASTE PROCESSOR CHECKLIST

REVIEWED BY/ DATE:	**GT Johnson/ 12/18/02**	**DL Vaught/ 12/16/02**
	NGO Radiation Protection	**NGO Chemistry**

NEDL SDQA "C"

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WASTE PROCESSOR CHECKLIST

NOTE: (This Checklist is a template and should be edited, as appropriate, for each individual company's Review)

Process Control Program (For Vendors who use a PCP to process wet wastes for disposal at a 10CFR61 licensed disposal site)

1. Verify that the vendor's Process Control Program (PCP), Quality Assurance program **and other Dewatering or Solidification process related documents as described in the Radioactive Waste PCP** for Duke Energy meet the requirements of the PCP. This is a PCP requirement.

Site License

1. Review the Vendor's Radioactive Material License and ensure that the specific license requirements are being meet.

State Regulations

1. Review the applicable State Regulations and ensure that any specific requirements are being met.

DOT Regulations

1. Does the Vendor meet the requirements of 49 CFR 172 Subpart H-Training?
   Requirement: Each employer is required to provide general awareness, function specific, and safety awareness training for each Hazmat employee. Training record keeping is required.

2. Does the Vendor meet the requirements of 49 CFR 172 Subpart I-Radiation Protection Program?
   Requirement: Each employer is required to develop, implement, and maintain a written Radiation protection program. The Vendor should perform and document an audit of the RP program annually.

Pre-planning

1. Has the shipper been trained in D.O.T. hazardous materials requirements?
2. Has the shipper or other site designee been trained to sign a waste manifest?
3. Has the waste been characterized and a profile approved with the Treatment, Storage or Disposal Facility (TSDF)?
4. Are there State-specific ID numbers that must be obtained by the shipper or carrier?
5. Is the release criteria for low-level radioactive waste documented?
6. Can it be demonstrated that instruments used to determine release criteria have been calibrated?

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WASTE PROCESSOR CHECKLIST

7. Does the carrier have a hazardous waste/radioactive waste transporter permit valid in all states that will be traveled?
8. Insurance coverage in the amounts required by DOT and the relevant states?
9. Has the route to the TSDF from the site been planned in advance with the carrier?
10. Does this route cross any states that require a shippers permit (Examples: Mississippi, Colorado) or a carriers temporary trip permit (Examples: Georgia, Maryland) for hazardous or radioactive materials/wastes?
11. If yes to # 9, has the shipper or carrier obtained these permits in advance of the ship date (allow at least 30 days lead- time for a shippers permit)?
12. In South Carolina, has a specific route been documented for low-level radioactive waste?

Packaging

1. Does the package meet D.O.T. specifications?
2. Is the package in good condition (no signs of weakness, deterioration or staining)?
3. Is the package securely closed/sealed?
4. Is there a package inspection process/documentation?
   - The D.O.T. proper shipping name?
   - The D.O.T. hazard class and corresponding labels?
   - The UN/NA number?
   - To and From addresses?
   - EPA hazardous waste or Non-hazardous waste label?
   - Manifest number?
   - EPA Waste I.D. Number
   - TSDF's Waste profile/approval code?

Manifest and Attachments

1. Are State or supplier-specific data provided in the state manifest block?
2. Is the generator identification complete and correct including phone number?
3. Are the page numbers clearly marked?
4. If photocopies are used, is the original identified as such in contrasting color?
5. Is the transporter's ID and correct phone number provided?
6. Are the D.O.T. descriptions correct and do they match the packaging?
7. Is the package count and weight correct?
8. Are waste codes and profile/approval codes entered?
9. Is a 24-hour emergency contact phone number provided? Is information truly available through this contact during off-hours? Are drills conducted?
10. Is the generator's printed name, signature, and date entered correctly?
11. Is the driver's printed name, signature, and date entered correctly?
12. Is a land disposal restriction (LDR) form attached for hazardous waste? If applicable:
    - Does the LDR have the correct generator name/location?

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WASTE PROCESSOR CHECKLIST

- The EPA ID number?
- The manifest number?
- The waste profile/approval number and corresponding description, treatability group, waste constituents, and universal treatment standards?
- Generator's printed name, title, signature, and date?

13. For low-level radioactive waste in South Carolina, is the Drivers Instruction Sheet attached?
14. Has it been confirmed with the TSDF that the third-signature manifest is returned to the generator within 20 days for low-level radioactive waste or 30 days for hazardous waste?

Transporter

1. Is there a vehicle inspection documented prior to departure?
2. Does the driver have a Commercial Drivers License with Hazardous Materials endorsement?
3. Does the driver keep the manifest and other shipping documents within reach in the truck?
4. Has the driver been instructed on the route for low-level radioactive waste?
5. Does the driver have copies of any shipper or temporary carrier permits needed for this route/trip?

Radiological Conditions

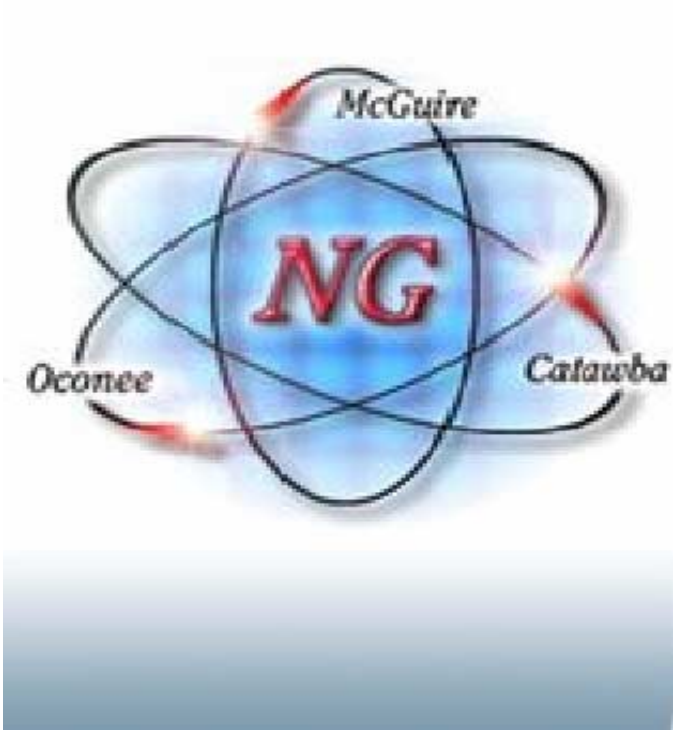
1. Are all radiological postings legible/consistent?
2. Are all radiological labels is legible/consistent?
3. Are RWP's posted?
4. Do workers read/understand the RWP?
5. Are workers dressed IAW the RWP?
6. Do the workers know the dose limits of their RWP?
7. Are workers properly wearing/reading/recording their dosimetry?

Waste Tracking

1. How does the vendor track each customers waste through the different waste processes?
2. How does the vendor account for the waste activity through each process/disposal site?
3. How does the vendor determine Type Quantity/Waste Class on a package with several customer's waste?

4. Does the vendor consider (and document compliance with) requirements of the BTP on Concentration Averaging?

RADIOACTIVE WASTE PROCESS CONTROL PROGRAM MANUAL



APPENDIX H Rev 3

Revision Summary - Licensee Initiated Changes

APPENDIX H Rev: 3

Revision Summary - Licensee Initiated Changes

CURRENT REVISION SUMMARY APPENDIX H REV 3
DESCRIPTION OF PCP MANUAL CHANGES NOVEMBER 2004

APPENDIX B: McGuire Nuclear Station Process Control Program Rev 17

The procedures described below were removed from the MNS PCP Implementing Procedure list due to the following changes:

CP/0/B/8300/022 "Handling of Laboratory Quantities of Spent Resin" was deleted because there are RP processes and controls that address this type of radioactive material.

OP/0/B/6200/068 "Process Control Program for CNSI Cement Solidification Units" was deleted because the procedure is not used or needed.

OP/0/B/6200/084 "Solidification of Grit Waste" was deleted because the procedure is not used or needed.

OP/1/B/6200/104 "Unit 1 Operating, Dewatering, and Shipping Liners Filled with Powdered Media and/or Bead Resin" was deleted. A new procedure was written that addresses the steps for "unwatering" for shipment to a vendor for reprocessing so by definition the PCP does not apply to the new procedure, OP/1/B/6200124 "Unit 1 Secondary Solid Waste Container Processing"

OP/2/B/6200/104 "Unit 2 Operating, Dewatering, and Shipping Liners Filled with Powdered Media and/or Bead Resin" was deleted. A new procedure was written that addresses the steps for "unwatering" for shipment to a vendor for reprocessing so by definition the PCP does not apply to the new procedure, OP/2/B/6200/124 "Unit 2 Secondary Solid Waste Container Processing".

OP/0/B/6200/094 "Transfer and Dewatering Radwaste Media - Radlok High Integrity Containers" was deleted because it is no longer used. The vendor for this process is no longer in business.

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Revision Summary - Licensee Initiated Changes

APPENDIX C: Catawba Nuclear Station Process Control Program Rev11

The CNS PCP Implementing Procedures list was revised to reflect the following procedure changes:

OP/1/B/6500/053 and OP/2/B/6500/053 "Transfer and Dewatering of Contaminated Secondary Resins" (Unit 1 & 2) are being removed from the CNS PCP Implementing Procedure list because they were revised to remove the PCP dewatering activities. The revised procedures OP/1 and 2/B/6500/053 "Transfer and Unwatering of Secondary Resin" will now be used only for "unwatering" Secondary resin that is not being prepared for direct disposal at a 10CFR61 disposal site, so by definition the PCP does not apply to the new procedures.

OP/0/B/6500/082 "Dewatering Secondary Contaminated Resin" is being added to the CNS PCP Implementing Procedure list. This new procedure was written to address the PCP dewatering of contaminated Secondary side resin removed from OP/1&2/ B/6500/053 to be performed by the Radwaste Chemistry group.

OP/0/B/6500/013 "Operating Procedure for the Nuclear Solid Waste (WS) Disposal System" which is listed in the CNS PCP Implementing Procedure list has been renumbered and is now OP/0/B/6500/111. The content is the same, only the number has changed due to PIP C-04-2308. This PIP required procedures that have the same number as other groups' procedures to be changed to eliminate a human error trap.

END OF CURRENT REVISION 3 SUMMARY

APPENDIX B McGuire Nuclear Station Process Control Program Rev 17
APPENDIX C Catawba Nuclear Station Process Control Program Rev11

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Revision Summary - Licensee Initiated Changes

PREVIOUS REVISION APPENDIX H REV 2
SUMMARY OF MARCH 2004 REVISION 1 OF
APPENDIX D: "APPROVED SUPPLIERS OF PCP SERVICES"

Appendix D of the Radioactive Waste PCP Manual was revised to remove the ATG from the approved suppliers' list and to add Studsvik to the list.

The bases for the changes made are described below:

ATG declared bankruptcy in 2002 and various other companies purchased portions of their assets and programs.

The vendor Studsvik was evaluated and approved for the VR services described in the revision 1 of the APPENDIX D section of the Radioactive Waste PCP Manual. The approval was based on the requirements of the Corporate PCP section of the PCP Manual and APPENDIX G: "Waste Processor Checklist" section of the PCP Manual. The approval included a review of Studsvik documents describing the QA program, Process Control Program, and RP programs/ practices. A NUPIC audit report dated February 20, 2002 was reviewed.

The report of the evaluation and approval of Studsvik is summarized in PIP G-04-0113.

END OF PREVIOUS REVISION 2 SUMMARY

March 2004 REVISION 1 of APPENDIX D of the PCP Manual

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Revision Summary - Licensee Initiated Changes

PREVIOUS REVISION APPENDIX H REV 1
SUMMARY OF NOVEMBER 2003 REVISION 14 OF CORPORATE PCP
(CONSERVATIVE GUIDANCE FROM ROOT CAUSE)

Revision 14 to the Corporate PCP section of the Radioactive Waste Process Control Program Manual incorporates additional guidance for dewatering activities to ensure adequate conservatism is provided by the PCP implementing procedures. An event involving the failure of a dewatered HIC to meet the free standing liquid (FSL) limits at Barnwell and the subsequent root cause investigation identified changes that would provide greater confidence in meeting the FSL requirements. Also some editorial changes not related to the root cause evaluation were made. The changes are summarized below.

Added the PIP references associated with the Root Cause in O-03-0624, and the applicability evaluation PIPs at MNS and CNS, M-03-2515 and C-03-3385 to section 4, “DUKE ENERGY PROGRAMMATIC REFERENCES”.

Added two additional Regulatory Guidance references to Section 3, “Regulatory References”

3.2.10 NRC "TECHNICAL POSITION ON WASTE FORM" Revision 1 (January 1991)

3.2.11 ANSI/ANS-40.37-1993 “mobile radioactive waste processing systems”

Added item 5.17 in section 5, “DEFINITIONS” to describe the Topical Report, its significance in the development of the PCP and how its applicability to actual conditions can impact the degree of conservatism needed.

Added section 7.5, entitled “Periodic cross-checks & comparisons” that addresses a requirement from the Root Cause evaluation for benchmarking the ONS dewatering processes.

Added section 11.3 entitled “Additional Conservatism in Slurry Dewatering Procedures to Address Variation from the Topical Report (PIP O-03-0624, M-03-2515, C-03-3385)” to incorporate the specific additional guidance needed in dewatering procedures at all 3 sites. The Root Cause identified corrective actions required to prevent recurrence (CAPR) and other enhancements that were evaluated for consideration on a site by site basis. Only the corrective actions that were applicable to all three sites have been incorporated into the Corporate PCP. Those corrective actions that were more site-specific have been incorporated in the site implementing procedures as needed.

Added section 11.3.1 that describes the need to include procedural flexibility/ guidance for Chemistry to add conservatism to any PCP dewatering process if waste content and/ or process conditions are atypical in a non conservative manner and provides examples of such actions.

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PREVIOUS REVISION APPENDIX H REV 1
SUMMARY OF NOVEMBER 2003 REVISION 14 OF CORPORATE PCP
(CONSERVATIVE GUIDANCE FROM ROOT CAUSE)

Added section 11.3.2 that provides guidance for procedures used to dewater liners using a PCP for direct disposal at Barnwell based on the PIP O-03-0624 CAPRs summarized below:

- requires liner functional testing prior to filling liner with waste to ensure there are no leaks in the liner dewatering system
- requires that ambient temperature guidance for dewatering will preclude localized freezing conditions during the dewatering sequence
- requires that the final water collection sample point must be representative (e.g., as close as possible to the pump discharge)

Added section 11.3.3 to address PCP dewatering procedures for Mixed Media with significant non-media solids:

- requires use of Ecodex filter system in all liners that contain mixed media with significant non-media solids
- requires that procedures clearly specify media loading sequence if media is not homogeneously mixed to minimize potential blinding of the lowest level of filters
- requires additional dewatering Cycles for mixed media liners after the acceptance criteria in the vendor procedure have been met
- requires longer settling periods during the additional dewatering cycles
- requires dewatering through bottom 2 laterals during liner filling based on the Topical Report requirement to establishes proper media compaction and capillary conditions
- requires initial liner unwatering upon completion of final waste transfer to liner

In Sections 11.5.2.1, 11.5.3.1, 11.5.4.2 D added wording to clarify that FSL verification can be accomplished using either an onsite PCP process or an approved offsite vendor process.

END OF PREVIOUS REVISION 1 SUMMARY
November 2003 REVISION 14 of CORPORATE PCP

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Revision Summary - Licensee Initiated Changes

PREVIOUS REVISION APPENDIX H REV 0
SUMMARY OF MARCH 2003 MANUAL REWRITE OVERVIEW

The Duke Energy Radioactive Waste Process Control Program Manual is a rewrite of the original DPCo PCP. The Corporate PCP and Introduction chapters of the DPCo PCP have been revised many times to incorporate critical changes, but have not been rewritten since the original publication. During the ensuing period many new programs and processes have been developed within Duke Energy, disposal site requirements and availability have changed and new process options are now available in the commercial Radwaste industry. This rewrite attempts to incorporate these changes, integrate the PCP Manual with other programs within Duke Energy and create flexibility for future administration.

The reissued manual attempts to address specific issues identified in numerous audits and Problem Investigation Process (PIP) reports. The PIPS listed below identified changes needed or were associated with this revision:

- G-00-0401 (QA Audit of NGO PCP & support documents. This PIP incorporated corrective actions from C-01-02522, O-01-01067, G-99-00349, C-99-05094)
- G-02-0272 (QA Audit of PCP Support Documentation)
- C-01-02522 (NRC CNS Audit - Offsite Vendors)
- O-01-01067 (ONS Filter HIC Dewatering Clarification)
- O-00-4680 (ONS Filter dewatering procedure use)
- G-99-00349 (NGO Radwaste Support PCP Evaluation)
- C-99-05094 (SLC Change Issues)

DETAILED DISCUSSION OF CHANGES

1. MANUAL ORGANIZATION AND FORMAT CHANGES

The reorganization of the PCP segregates technical requirements from administrative information to reduce the necessity for performing revisions with their associated management approvals every time administrative and non-technical changes occur. (i.e., the Corporate PCP defines the program requirements, the administrative appendices provide details of how the program and associated documents are managed) The regulatory and SLC requirements are contained in the Corporate PCP section of the manual. Where guidance is addressed in more

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Revision Summary - Licensee Initiated Changes

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SUMMARY OF MARCH 2003 MANUAL REWRITE OVERVIEW

detail by other Duke Energy programs, a reference to that program replaced the redundant information in the earlier version of PCP. (e.g., EWP 2.8 "Waste Oil" and 2.9 "Mixed Waste")

The details of the manual reorganization are discussed below.

1.1 Old PCP Manual Organization

The superseded DPCo Process Control Program was organized as follows:

I. Introduction

II. Corporate PCP Rev 12

III. ONS PCP Rev 11

IV. MNS PCP Rev 16

V. CNS PCP Rev 10

VI-IX. Contained FOR INFO ONLY regulatory and historical reference information that was not considered part of the controlled document.

1.2 New PCP Manual Organization

The new PCP Manual is organized as follows:

CORPORATE PROCESS CONTROL PROGRAM Rev 13

The Corporate Process Control Program (PCP) contains the technical requirements previously contained in Chapters I and II in the DPCo PCP. The details of this revision are summarized in section 2 below, "Corporate PCP Changes".

APPENDIX A "OCONEE NUCLEAR STATION PCP" Rev 12

This revision of the Oconee PCP incorporates the new manual formatting and the removes the exception to the Corporate PCP pertaining to vendor approvals. Previously each site PCP contained an exception to the Corporate PCP requirement that the Station Manager or his designee had to approve solidification or dewatering services. This exception was incorporated into the Corporate PCP such that only corporate review and approval of vendor solidification and dewatering services are now indicated.(Ref: PIP G-00-0401)

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The Chemistry procedure CP/3/B/5200/08A "Unit 3 High Activity Spent Resin Storage Tank (HASRST) Resin Transfer to Disposable Liner" was removed from the implementing procedures list because the PCP activities associated with this procedure have been eliminated.

APPENDIX B "McGUIRE NUCLEAR STATION PCP" Rev 16

This revision of the McGuire PCP incorporates the new manual formatting and the removal of the exception related to vendor approvals. Previously each site PCP contained an exception to the Corporate PCP requirement that the Station Manager or his designee had to approve solidification or dewatering services. This exception was incorporated into the Corporate PCP such that only corporate review and approval of vendor solidification and dewatering services are now indicated.(Ref: PIP G-00-0401)

The procedure OP/0/B/6200/065, "Transfer of Powdex to a Disposable Liner" has been removed from the McGuire PCP implementing procedure list. The PCP activities in this procedure have been incorporated into two other procedures already on the list, OP/1/B/6200/102, "Unit 1 CM Backwash Tank Operation" and OP/2/B/6200/102, "Unit 2 CM Backwash Tank Operation".

The procedure HP/0/B/1004/032, "Procedure for Packaging Radioactive Filters", used for filter dewatering and packaging was added to the implementing procedure list.

APPENDIX C "CATAWBA NUCLEAR STATION PCP" Rev 10

This revision of the Catawba PCP incorporates the new manual formatting and the removal of the exception related to vendor approvals. Previously each site PCP contained an exception to the Corporate PCP requirement that the Station Manager or his designee had to approve solidification or dewatering services. This exception was incorporated into the Corporate PCP such that only corporate review and approval of vendor solidification and dewatering services are now indicated.(Ref: PIP G-00-0401)

The CNS PCP procedure list was revised as follows:

- Corrected the entry for Chemistry procedure OP/1(2)/A/6250/016 "Operating Procedure for the, Condensate Polishing Demineralizer Backwash Tank Subsystem" to reflect that it is a "B" procedure and is unit specific. The entries are now OP/1/B/6250/016 "Condensate Polishing Demineralizer Backwash Tank Subsystem

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- Unit 1" and OP/2/B/6250/016 “Condensate Polishing Demineralizer Backwash Tank Subsystem - Unit 2".
- Revised entry for OP/1(2)/B/6500/053 to reflect current Unit specific titles OP/1/B/6500/053 “Transfer and Dewatering of Contaminated Secondary Resin Unit 1" and OP/2/B/6500/053 “Transfer and Dewatering of Contaminated Secondary Resin Unit 2".
- Removed Chemistry procedure OP/0/B/6500/072 "Operating Procedure for Filter HIC Operations" because it was deleted and is no longer needed.

APPENDIX D “APPROVED SUPPLIERS OF PCP SERVICES” Rev 0

This appendix lists the approved vendors and their services and provides additional detail of requirements contained in other documents. (e.g., vendor contract, purchase order, etc.) Removal of this detail from the Corporate PCP minimizes the number of revisions to the technical portion of the manual due to the unpredictable nature of vendor ownership and commercial changes. The Corporate PCP still describes the approval process and requires PCP service vendors to be incorporated into the QA supplier program. This program utilizes industry QA audits to monitor and verify vendor performance against customer program requirements. A note has been added to the computerized “Approved Supplier List” to ensure PCP vendors are maintained in the program unless NGO Chemistry requests or approves their removal.

APPENDIX E “PCP MANUAL REVIEW AND APPROVAL REQUIREMENTS”

This section summarizes in a tabular format the required reviews and approvals for revisions to the PCP Manual. This was previously discussed in the body of the Corporate PCP. The approval process is described in APPENDIX F. Additional approval requirements were added for the new appendices based on their significance to the regulated portion of the manual. Additional reviews by RP will be documented for those parts of the manual affecting their programs. The previous PCP included only Chemistry and station manager reviews and approvals. The formal RP review is intended to broaden awareness of and input to PCP requirements and improve integration of the PCP with other related programs and activities.

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SUMMARY OF MARCH 2003 MANUAL REWRITE OVERVIEW

APPENDIX F "ADMINISTRATION OF THE PCP AND SUPPORT DOCUMENTS"

This appendix describes the administrative processes used to manage and publish the PCP Manual and the supporting documents required to maintain it. This information was not contained in any detail in the prior versions of the PCP manual and has been added to address many of the document control issues identified in historical audits and recent PIPs. The process used to publish the manual electronically is described in detail to address SDQA requirements.

APPENDIX G "WASTE PROCESSOR CHECKLIST"

This document is a template used by NGO RP and Duke Energy Environmental Health Services to evaluate waste services. The document was revised and added to the PCP to ensure that vendors who provide PCP services are evaluated against the Duke Energy PCP and approved by the NGO Chemistry organization.

APPENDIX H "REVISION SUMMARY - LICENSEE INITIATED CHANGES"

This appendix incorporates revision summary information that in the past was contained in a transmittal letter. Incorporation of the revision discussion is consistent with the ODCM and other program documents where it is desirable to maintain a retrievable revision history.

1.3 Publication Changes

The manual reorganization facilitates the use of current administrative processes and electronic publication. Electronic publication is more user-friendly and addresses the PCP's problematic history related to the obscurity of the hard copy PCP manual. It also enhances administrative controls needed to ensure the most current revisions are used. (Ref: PIPs G-99-00349, G-00-0401)

The new PCP Manual is being published in the NEDL Portal under Electronic Licensing Library (ELL). Electronic publication enhances reference capability as described in NSD 228 APPENDIX B. In order to enhance the quality of NSD 228 applicability reviews, NSD 228 recommends that documents considered part of the licensing basis elements should be published electronically for easy and consistent utilization. The PCP and ODCM are licensing basis elements and historically have been grouped together in many Tech Spec and regulatory references. This revision aligns the PCP with the

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ODCM in its publication format, online accessibility, user interface, and administrative processes.

1.4 Formatting Changes

The new PCP has been reformatted using Nuclear Generation document font and formatting standards as described in the Procedure Writers' Guide and NSD 100. The Word template used is “procopta.dot”, modified to resemble the headings and hierarchy in the ODCM.

2. CORPORATE PCP CHANGES

2.1 Clarification of Programmatic linkage between Tech Specs, SLC and the PCP
(Ref: PIPs C-99-05094, G-00-0401)

The references below contain specific PCP requirements. A list of these and other Duke Energy program documents that impact the PCP Manual was added to the Corporate PCP to ensure that future PCP Manual revisions and revisions to implementing procedures would include these documents in the review process.

2.1.1 The requirement to include revisions to the PCP in the Annual Radiological Effluents Report to the NRC is found in the following:

- Oconee Technical Specification 5.6.2 “Annual Radiological Environmental Operating Report”
- Catawba SLC 16.11-16 “Annual Radiological Environmental Operating Report and Radioactive Effluent Release Report”
- McGuire SLC 16.11.17 “Radioactive Effluent Release Report”

2.1.2 The Commitment to have a Process Control Program, description of its applicability, specific Remedial Actions and Surveillance Requirement are in the following SLCs:

- Catawba SLC 16.11-11 “Solid Radioactive Waste”
- McGuire SLC 16.11.11 “Solid Radioactive Waste”
- Oconee SLC 16.11.5 “Solid Radioactive Waste”

The “Solid Radioactive Waste” SLCs listed above were submitted for revision during 2001-2002 to address intersite program consistency issues, inaccurate

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SUMMARY OF MARCH 2003 MANUAL REWRITE OVERVIEW

references to the Process Control Program (PCP) applicability and content. The wording in this PCP Manual rewrite incorporates the language in the SLC revision.

The SLC requirements were added to the Corporate PCP introduction to clarify SLC compliance. Those PCP requirements that specifically address SLC Remedial Actions and Surveillance Requirements in sections 10 and 11 are identified.

2.1.3 The following SLCs contain the commitment to have a Technical Review and Control Program covering the preparation, review, and approval of documents important to station operation, including review of PCP revisions by the NSRB:

- Catawba SLC 16.13.2 “Technical Review and Control”
- McGuire SLC 16.13.2 “Technical Review and Control”
- Oconee SLC 16.13.2 “Technical Review and Control”

2.2 New Sections in the Corporate PCP

The following new sections were added to the Corporate PCP to consolidate and emphasize requirements under major headings that more closely align with the organization of other Duke Energy program guidance documents:

- Applicability
- Duke Energy Programmatic References
- Definitions

  This section lists definitions needed to interpret the PCP and consolidates them into one section.

- Responsibilities

  Specific responsibilities were clarified and the need for all site programs that impact the generation and management of liquid & wet radioactive wastes to support compliance with the PCP was emphasized.

- Administration of the PCP and Support Documents

  Consolidates all of the administrative requirements into one section and refers to the details contained in APPENDIX F.

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- Approval Process for QA Approved Suppliers

  This section describes and clarifies the linkage between existing Supply Chain processes and PCP compliance involving vendors. The incorporation of vendor PCP services into the QA Approved Suppliers List and its associated NUPIC QA Audit process is a critical component of maintaining required oversight of PCP compliance.

- PCP Requirements for Vendor Processes and Services

  This section consolidates vendor program and process requirements into one section.

2.3 PCP Retention Requirements Changes

The record retention requirements were revised in the Duke Energy Information Retention Policy to align with other records that have long term litigation significance. The PCP rewrite incorporates these changes in APPENDIX F. Archive requirements were expanded to include vendor documents used to implement the PCP requirements.

2.4 Vendor Names and Service Information Update
(Ref: PIPs G-99-00349, C-01-02522)

The original version of the Corporate PCP was written when the only vendor services available were onsite mobile units that were interfaced with plant equipment and the final waste form was accomplished prior to shipping the waste offsite. Most current vendor services are offsite processes performed at the vendor location. To accommodate this, the discussion of Radwaste vendors was expanded to include offsite processing. Details of the vendor approval process and documentation requirements were enhanced and the interface with Supply Chain processes emphasized.

2.5 Changes in the Solidification Section
The guidance for solidification was rewritten to be more of a guideline of the minimum content required for implementing procedures.

The technical requirements for solidification of liquid or wet wastes to meet regulatory requirements have not changed. This section was reorganized to provide an outline of the major process steps that must be included in solidification procedures to adequately address the PCP requirements for a solidification process. Redundant presentation of information due to the organization of the prior version was removed. (e.g., the

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"Introduction" chapter contained solidification discussion that was repeated in the "Solidification" section of the Corporate PCP chapter) Notation identifying requirements derived from SLC was added for clarity in developing or reviewing implementing procedures. Guidance was updated to incorporate vendor support.

2.6 Expanded Guidance for Dewatering
(Ref: PIPs O-01-01067, G-00-0401)

The dewatering section, 11, in the new Corporate PCP) contains all of the requirements from the previous version, but was revised to clarify the distinctive requirements for dewatering of mechanical filters and media. The discussion of mechanical filter dewatering was expanded to clarify the distinction between dewatering filters to meet PCP requirements and removal of FSL from the filter disposal container. Requirements derived from SLC are identified for clarity in developing or reviewing implementing procedures. Guidance was updated to incorporate vendor support and lessons learned.

3. ADMINISTRATIVE PROCESS CHANGES

Most of the processes used to administer the PCP changed during the rewrite of the PCP Manual. This level of detail was not documented in the DPCo PCP. It was added to address the many administrative issues described in the PIPs listed above. APPENDIX F describes the requirements for administering the Process Control Program and the documents required to implement the program. It details the administrative processes used to implement several of the requirements contained in the Corporate PCP. The following list summarizes the major processes that are detailed in APPENDIX F.

Enclosure 6.1 "PCP Manual Revision Publication Process"

This enclosure describes in detail the revision process in the electronic environment. Significant changes from the old process are:

- Electronic routing of the manual for review and approval
- Electronic approval using email responses to communicate approval. The email will be printed out and included in the archive of the revision as documentation of required approvals.
- Publication process using Scribe for user viewing in the NEDL Portal

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- Process for transmittal of the PCP revisions to the NRC only once per year in the Annual Radioactive Effluents Report. Historically the PCP sections were transmitted to the NRC at the time they were revised to allow for page by page insertions in the hard copy manuals maintained by the NRC. The new process is similar to the process used for the ODCM.

Enclosure 6.2 "Chemistry Distribution of Radwaste Vendor Documents"

A detailed administrative process for electronic publication, archival and incorporation of documents from approved suppliers comprises this enclosure. Although portions of this process have been used for the past two years, it is now documented in the manual and adds the archival requirements and process.

Enclosure 6.3 "NSD 319 VTI Impact Assessment Process for PCP Related Vendor Documents Used In Chemistry"

This enclosure describes the process for evaluating vendor documents for technical impact to the PCP and implementing procedures. The basis for this process is NSD 319 "Vendor Technical Information Program". It requires technical review by NGO and station Chemistry using a list of criteria from NSD 319 to determine if the changes in the document require any PCP related document revisions and documentation of the conclusions of the review in PIP.

END OF PREVIOUS REVISION 0 SUMMARY
MARCH 2003 PCP MANUAL REWRITE