# PROCESS CONTROL PROGRAM

TU ELECTRIC

COMANCHE PEAK STEAM ELECTRIC STATION

Revision 0
April 1989

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# DEFINITIONS

Terms in this manual which have a specific definition or meaning are capitalized (e.g., "OPERABILITY"). Definitions for such capitalized terms are found in Section 1.0 of the CPSES Technical Specifications, with the exception of "PROCESSING" which is defined below:

PROCESSING

PROCESSING shall be the conversion of wet radioactive waste into a form that meets shipping and burial ground requirements.

SECTION 1.0

INTRODUCTION

## 1.1 PURPOSE

The purpose of the CPSES Process Control Program (PCP) is to establish a program which will provide reasonable assurance that all radioactive wastes generated at CPSES that are to be disposed of at a land disposal facility are PROCESSED and packaged such that applicable Federal regulations, State rules and regulations, and disposal site criteria are satisfied. The PCP contains a general description of the methods for controlling the PROCESSING and packaging of radioactive wastes, specific parameters for each method, and the administrative controls and quality assurance required to ensure compliance with applicable regulations and requirements.

## 1.2 SCOPE

This program defines criteria for the PROCESSING of the following waste streams for disposal at a land disposal facility:

(1) Wet Wastes

- (a) Resins (bead and powdered)
- (b) Cartridge Filters
- (c) Evaporator Concentrates
- (d) Sludge
- (e) Miscellaneous liquids

(2) Dry Active Wastes (DAW)

- (a) Compactible
- (b) Noncompactible

## 1.3 PRECAUTIONS/LIMITATIONS

Except as specifically described in this document, the following general precautions and limitations apply to the PROCESSING and packaging of all radioactive wastes generated at CPSES for disposal at a land disposal facility. These precautions and limitations shall be included in appropriate station or vendor implementing procedures.

(1) No liquid materials within the scope of this program shall be packaged for disposal.

(2) No package shall be loaded for shipment if it has any indication of a hole or failure. These packages shall either be repacked, or placed in an overpack.

(3) Radioactive waste shall not be packaged for disposal in cardboard or fiberboard boxes.

(4) Only High Integrity Containers (HIC) approved for burial at a land disposal facility shall be utilized for packaging dewatered wastes when waste form stability is required per 10CFR61.

(5) No objects or materials shall be placed into HICs that may cause chemical or physical damage to the container per the vendors 10CFR61 Topical Report or other Federal, State or Burial Facility requirements.

(6) As much as practical, polyethylene HICs shall be kept out of direct sunlight to prevent ultraviolet light degradation. Protection from direct sunlight shall be provided when HICs are stored for extended periods.

(7) Radioactive waste shall not be packaged for disposal if it is pyrophoric. Pyrophoric materials contained in radioactive waste shall be treated, prepared, and packaged to be nonflammable prior to disposal.

(8) Radioactive waste in gaseous form shall not be packaged for disposal.

(9) Radioactive waste containing hazardous material shall be treated to reduce to the maximum extent practicable the potential hazard from the nonradiological materials. Biological, pathogenic or infectious material is not expected to be produced and will be handled on a case by case basis.

(10) Radioactive wastes shall not be packaged for disposal if it is readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water.

(11) Radioactive waste shall not be packaged for disposal if it contains, or is capable of generating quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling or disposing of the waste.

(12) Samples shall be handled and collected in accordance with applicable CPSES procedures and in keeping with ALARA principles.

(13) PROCESSING evolutions should be periodically monitored for adverse chemical reactions and temperature changes.

## 1.4 RESPONSIBILITIES

### 1.4.1 Vice President, Nuclear Operations

It is the responsibility of the Vice President, Nuclear Operations, to ensure that the requirements contained in this manual are achieved during the PROCESSING of radioactive waste by developing appropriate administrative and implementing procedures. An organizational chart showing specific station

responsibilities for radioactive waste PROCESSING assigned by the Vice President, Nuclear Operations, is shown on Figure 1-1. The Vice President, Nuclear Operations, is responsible for approving changes to this PROCESS CONTROL PROGRAM, as required by Technical Specification 6.13.

1.4.2 Station Operations Review Committee

The Station Operations Review Committee (SORC) shall review the Topical Reports and Process Control Programs of vendors selected to provide waste processing services or products prior to their initial use at the station. Any subsequent revision to these documents shall also be reviewed by SORC prior to the initial use of the revision. These reviews shall ensure compatibility with Station equipment and operation.

Additionally, SORC is responsible for reviewing changes to this PCP prior to implementation. SORC also reviews station administrative and implementing procedures for radioactive waste processing activities.

1.4.3 Radiation Protection Manager

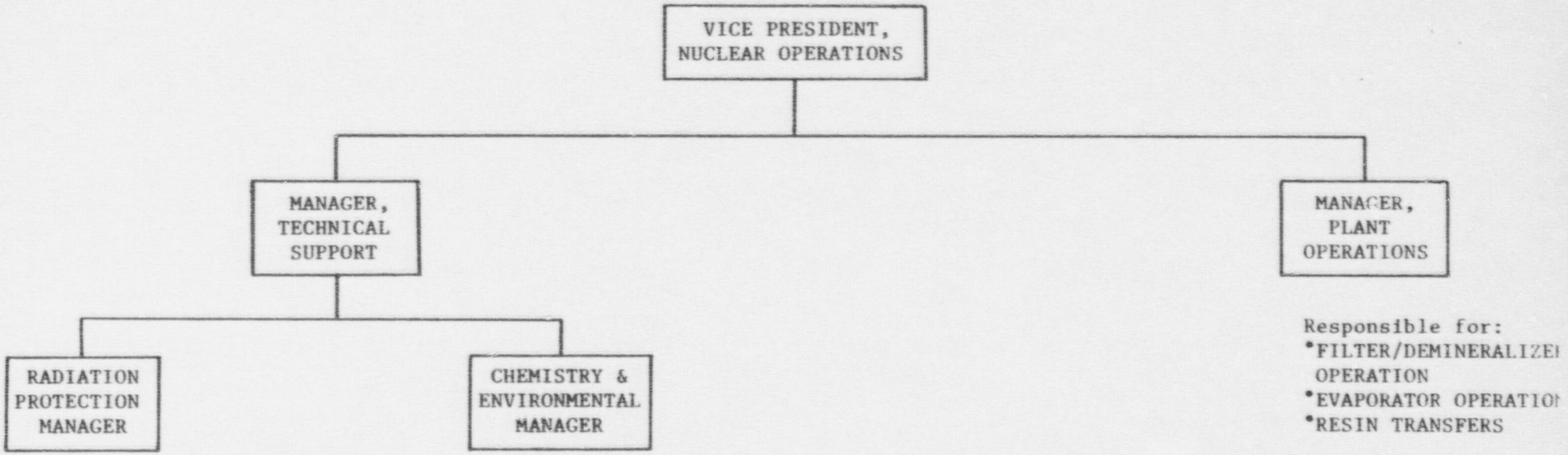
The Radiation Protection Manager (RPM) is responsible for coordinating the review of, and for approving, vendor procedures for waste processing prior to the initial use of the documents at the station. He shall also approve any revisions to these documents prior to initial use of the revision. Review of vendor procedures for waste processing shall include technical review by the Operations, Chemistry, and Results Engineering departments.

1.4.4 Other Responsibilities

The Manager, Plant Operations, the Chemistry and Environmental Manager, and the Results Engineering Manager shall support the RPM in reviewing vendor procedures for waste processing.

FIGURE 1-1

CPSES RADIOACTIVE WASTE MANAGEMENT
ORGANIZATIONAL RESPONSIBILITIES

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SECTION 2.0

RADIOACTIVE WASTE PROCESSING REQUIREMENTS

## 2.1 SOLID RADIOACTIVE WASTES

### OPERABILITY CRITERIA

2.1.1 Radioactive wastes shall be PROCESSED in accordance with this PROCESS CONTROL PROGRAM to meet shipping and transportation requirements during transit, and disposal site requirements when received at the disposal site.

APPLICABILITY: At all times.

COMPENSATORY MEASURES:

a. With PROCESSING not meeting disposal site and shipping and transportation requirements, suspend shipment of the inadequately processed wastes and correct this PROCESS CONTROL PROGRAM, the procedures, and/or the Waste Processing System as necessary to prevent recurrence.

b. With PROCESSING not performed in accordance with this PROCESS CONTROL PROGRAM, test the improperly PROCESSED waste in each container to ensure that it meets burial ground and shipping requirements and take appropriate administrative action to prevent recurrence.

c. The provisions of Technical Specifications 3.0.3 and 3.0.4 are not applicable.

### TESTS/INSPECTIONS

2.1.2 Satisfactory PROCESSING of wet radioactive wastes (e.g., filter sludges, spent resins, evaporator bottoms, boric acid solutions, and sodium sulfate solutions) shall be verified in accordance with this PROCESS CONTROL PROGRAM:

a. If any test specimen fails to verify satisfactory PROCESSING, the PROCESSING of the batch under test shall be suspended until such time as additional testing can be performed, alternative PROCESSING parameters can be determined in accordance with this PROCESS CONTROL PROGRAM, and subsequent testing verifies satisfactory PROCESSING. PROCESSING of the batch may then be resumed using the alternative PROCESSING parameters determined by this PROCESS CONTROL PROGRAM;

   This PROCESS CONTROL PROGRAM shall be modified as required, as provided in Technical Specification 6.13, to assure satisfactory PROCESSING of subsequent batches of waste; and

b. With the installed equipment incapable of meeting Operability Criteria 2.1.1, above, or declared inoperable, restore the equipment to OPERABLE status or provide for contract capability to process wastes as necessary to satisfy all applicable transportation and disposal requirements.

BASIS

2.1.3 This requirement implements the requirements of 10CFR50.36a and General Design Criterion 60 of Appendix A to 10CFR Part 50. The process parameters included in establishing this PROCESS CONTROL PROGRAM may include, but are not limited to, waste type, waste pH, waste/liquid/solidification agent/catalyst ratios, waste oil content, waste principal chemical constituents, mixing and curing times, or dewatering parameters.

## 2.2 MAJOR CHANGES TO LIQUID, GASEOUS, AND SOLID RADWASTE TREATMENT SYSTEMS*

Licensee-initiated major changes to the Radwaste Treatment Systems (liquid, gaseous, and solid):

a. Shall be reported to the Commission in the Semiannual Radioactive Effluent Release Report for the period in which the evaluation was reviewed by the SORC. The discussion of each change shall contain:

1) A summary of the evaluation that led to the determination that the change could be made in accordance with 10CFR50.59;

2) Sufficient detailed information to totally support the reason for the change without benefit of additional or supplemental information;

3) A detailed description of the equipment, components, and processes involved and the interfaces with other plant systems;

4) An evaluation of the change, which shows the predicted releases of radioactive materials in liquid and gaseous effluents and/or quantity of solid waste that differ from those previously predicted in the License application and amendments thereto;

5) An evaluation of the change, which shows the expected maximum exposures to a MEMBER OF THE PUBLIC in the UNRESTICTED AREA and to the general population that differ from those previously estimated in the License application and amendments thereto;

6) A comparison of the predicted releases of radioactive materials, in liquid and gaseous effluents and in solid waste, to the actual releases for the period prior to when the change is to be made;

7) An estimate of the exposure to plant operating personnel as a result of the change; and

8) Documentation of the fact that the change was reviewed and found acceptable by the SORC.

b. Shall become effective upon review and acceptance by the SORC.

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*Licensees may choose to submit the information called for in this Requirement as part of the annual FSAR update.

SECTION 3.0

PROGRAM DESCRIPTION

## 3.1 PROCESSING OF WET RADIOACTIVE WASTE

### 3.1.1 PROCESSING Methods

Wet radioactive waste generated at CPSES shall be PROCESSED into a form acceptable for disposal at a licensed facility by dewatering. PROCESSING shall be performed utilizing vendor supplied services and equipment operating in accordance with the vendor's Process Control Program (PCP) and procedures. Any vendor selected to provide services or products used for compliance with 10CFR61 stability requirements shall have a topical report addressing 10CFR61 requirements under review or approved by the NRC. When a vendor is initially selected, this document shall be revised to incorporate by reference the vendor's Topical Report and PCP. The Topical Reports and PCPs of multiple vendors may be referenced in this PCP even if all vendors are not actively providing services or products at CPSES. However, if any vendor is selected whose documents are not referenced, this document shall be revised to reference them.

### 3.1.2 Processing System Description

Detailed descriptions of the vendor's PROCESSING system shall be included in the vendor's Topical Report.

### 3.1.3 Prequalification Testing

Prequalification tests shall be performed on each type of wet radioactive waste stream to demonstrate the ability of the process to produce an acceptable waste form per the requirements of 10 CFR 61. This prequalification testing is performed by the vendor and documented in the vendor's Topical Report.

### 3.1.4 System Qualification Tests

Prior to the initial PROCESSING of a given waste stream type using a specified process, a test shall be conducted to demonstrate the ability of the process system to produce an acceptable waste form over the range of critical parameters identified during the prequalification testing. Bounds for critical parameters and specific operating limits shall be specified in the vendor's PCP.

These tests shall be performed on laboratory scale or full scale specimens and shall ensure that the acceptance criteria specified in Section 3.1.8 are achieved.

3.1.5 Equipment/System Operability Requirements

Prior to each PROCESSING evolution, the vendor shall demonstrate operability of the processing equipment which shall include but not be limited to the following:

(1) Control Panel
(2) Instrumentation and Controls
(3) Mechanical Equipment
(4) Electrical Equipment

The operability test shall be performed in accordance with station procedures and the vendor's PCP and procedures.

3.1.6 Batch Preprocessing Sampling

Each batch of waste offered for PROCESSING shall be sampled and analyzed, as appropriate, in accordance with station procedures and the vendor's PCP and the Topical Report that addresses the 10CFR61 stability requirements. This sampling shall:

(1) Provide necessary data to estimate curie content and perform the waste classification analysis.

(2) Ensure that waste stream parameters are within the bounds for critical parameters established in the vendor's PCP and 10CFR61 Topical Report.

NOTE: Results of waste stream chemical analyses shall be reviewed by the PROCESSING vendor to ensure chemical constituents do not exist which could cause adverse chemical reactions during the dewatering process or react adversely with the dewatering container.

3.1.7 Testing/Inspections

To satisfy the Test/Inspection requirements of Section 2.1.2 of this Program, a test or inspection shall be performed for each dewatering evolution to ensure that the applicable acceptance criteria of Section 3.1.8 are achieved. This is accomplished by verifying that a specified end point is achieved for each dewatering evolution of the actual waste stream.

If the test results fail to meet the acceptance criteria, the following steps, as per the Compensatory Measures of Section 2.1.1, shall be followed:

(1) PROCESSING of the batch under test shall be suspended until such time as additional testing can be performed, alternative PROCESSING parameters can be determined, and subsequent testing verifies satisfactory PROCESSING of the

waste. PROCESSING of the batch may then be resumed using the alternative PROCESSING parameters if the alternative parameters will produce a product that falls within the vendors qualification envelope.

The vendor's PCP shall provide the method for determining the alternative PROCESSING parameters. Alternative PROCESSING parameters which fall within the vendor's qualification testing envelope shall be approved by the Radwaste Coordinator or his designee and shall be documented in accordance with the vendor's PCP. The vendor's PCP shall be modified as required to assure adequate PROCESSING of subsequent batches of waste. Any changes should be consistent with the conditions, limitations, and restrictions addressed in the vendor's 10CFR61 Topical Report.

(2) If the test results failure is due to malfunction of the processing equipment or the processing equipment is inoperable, the equipment shall be returned to an OPERABLE condition or an alternate vendor shall be obtained to process waste as necessary to satisfy applicable transportation and disposal requirements.

3.1.8 Dewatering Acceptance Criteria

(1) Non-Stable Waste Form -

For wastes dewatered in non-HICs, the acceptance criteria shall be less than or equal to one-half of one percent (0.5%) of the internal volume of the container for free standing water.

(2) Stable Waste Form -

Waste shall be dewatered in an approved HIC, and the acceptance criteria shall be less than or equal to one percent (1%) of the internal volume of the HIC for free standing water.

Vendor documents for the dewatering process shall include a specified end-point for each dewatering evolution which ensures that these acceptance criteria are achieved.

3.1.9 Corrective Actions

With dewatering not meeting the above acceptance criteria or otherwise not meeting disposal site and shipping and transportation requirements, suspend shipment of

the inadequately PROCESSED waste and correct the Process Control Program, the procedures, and/or the waste processing equipment as necessary to prevent a recurrence. Additionally, an evaluation of similar wastes PROCESSED since the last successful surveillance test shall be conducted to determine the extent of the inadequately processed waste. If such wastes have been shipped for disposal, the disposal site operator shall be contacted and the problem addressed.

If dewatering is not performed in accordance with this PCP, the improperly PROCESSED waste shall be tested to ensure that it meets burial ground and shipping requirements. Appropriate corrective actions shall be taken to prevent recurrence.

Disposition of inadequately PROCESSED wastes will be handled on a case-by-case basis.

## 3.2 PROCESSING OF DRY ACTIVE WASTE

Dry Active Waste (DAW) generated at CPSES shall be processed by segregation, sorting, and/or compaction. Processing of DAW is performed to accomplish the following functions:

(1) Package DAW in a fashion acceptable for disposal at a licensed disposal facility.

(2) Remove constituents not acceptable for disposal as DAW.

(3) Minimize volumes of DAW shipped for disposal by:

(a) removing reuseable and uncontaminated items; and
(b) reducing shipped volumes by compaction.

All processing of DAW at CPSES shall be performed in accordance with approved station procedures or vendor procedures that have been reviewed by the Radiation Protection Manager. Vendor equipment, personnel and procedures may be used for DAW processing and packaging.

The segregation of uncontaminated waste from DAW is performed to minimize volumes of DAW shipped for disposal. In order to provide reasonable assurance that radioactive materials are not released as clean waste, the following requirements shall be included in the segregation program, as discussed in Reference 6.5.3:

(1) Surveys, using equipment and techniques for detecting low levels of radioactivity, shall be made of materials that may be contaminated and that are to be disposed of as clean wastes.

(2) Surveys may be conducted on individual items using portable survey instruments, such as pancake GM probes. However, in all cases, final measurements of each package (e g., bag or box) of aggregated

waste to be released as clean waste shall be performed to ensure that there has not been an accumulation of radioactive material due to the buildup of multiple quantities of contamination which were nondetectable with portable instrumentation. Final measurements shall be performed using sensitive detectors in a low background area, such as scintillation detectors.

## 3.3 MIXED WASTE

Mixed Waste is defined as waste that contains constituents that satisfy the definition of radioactive waste, subject to the Atomic Energy Act, and contains hazardous waste that either (1) is listed as hazardous waste in 40CFR261, Subpart D, or (2) causes the waste to exhibit any of the hazardous waste characteristics identified in 40CFR261, Subpart C. Under current federal law, this waste is subject to dual regulation by the NRC and EPA where both agencies have control over the same waste. Due to the complex regulatory issues that must be resolved pertaining to mixed waste, there are currently no authorized disposal sites in the United States which are licensed to receive and dispose of mixed hazardous and radioactive waste.

Since there is currently no avenue for disposal of mixed waste, efforts shall be made to reduce the generation of such waste at CPSES. To accomplish this, station procedures for chemical control and radioactive waste processing shall include the following requirements:

(1) The Station chemical control program shall include a method to identify hazardous constituents of chemicals/chemical products and to evaluate and authorize any usage of these products in areas where mixed waste generation is likely to occur. This evaluation shall consider the substitution of products which are evaluated as non-hazardous per 40CFR261.

(2) Radioactive waste processing procedures shall include provisions for segregation and removal of non-radioactive hazardous constituents. Upon removal, such constituents would be handled as hazardous waste as required by the EPA.

(3) Mixed low-level radioactive waste generated at CPSES shall not be shipped for disposal to a low-level radioactive waste disposal facility unless specific approval for such disposal is granted by the appropriate regulatory agencies. Such wastes shall be stored at CPSES until regulatory changes allow for disposal or they are otherwise approved for disposal by appropriate regulatory agencies.

SECTION 4.0

WASTE CLASSIFICATION AND CHARACTERIZATION

## 4.1 WASTE CLASSIFICATION

Radioactive waste generated at CPSES shall be classified as Class A, B, or C in accordance with the requirements of 10 CFR 61, Section 61.55, using one or more of the classification methods given in the USNRC's "Low-Level Waste Licensing Branch Technical Position on Radioactive Waste Classification (May 1983)". Waste classification shall be performed in accordance with approved station procedures.

The following specific requirements shall be incorporated in the program for sampling and analysis for waste classification:

(1) Annual analyses shall be performed on representative samples of each waste stream or, alternatively, a process stream associated with the generation of the waste, for the nuclides listed in Table 1 and Table 2 of 10 CFR 61, Section 61.55.

(2) The results of these annual analyses shall be used to develop isotopic abundances and scaling factors for difficult to measure nuclides (i.e., beta emitters and transuranics) based on correlations between those nuclides and more easily measured gamma emitters.

(3) Gamma spectroscopy or gross radioactivity measurements shall be made for each container of waste processed for disposal. Calculational methods for determining the total activity in each container shall be developed which use the results of the gamma spectroscopy or gross activity measurements, and the percent isotopic abundances and scaling factors from the annual analyses.

(4) The classification program shall establish criteria and include provisions for increased frequency for the sampling and analysis required by paragraph (1), above, if the failed fuel fraction changes by a factor of 10.

(5) Each package of waste shall be clearly labeled as Class A, Class B, or Class C.

## 4.2 WASTE CHARACTERISTICS

Waste PROCESSED for disposal at CPSES shall meet the applicable characteristics specified in 10 CFR 61, Section 61.56. Waste classified as Class B, Class C, or Class A waste that will not be segregated from Class B and C wastes at the burial facility shall be processed into a stable waste form. This shall be accomplished by placement into a HIC which meets the stability requirements of 10 CFR

61.56, per Section 3.1 of this manual. The vendor's topical report shall include documentation of testing which verifies that the HIC meets these stability requirements. Additionally, TU Electric shall comply with Federal or State requirements imposed specifically on an approved HIC which limit the type and/or radioactive concentration of the waste to be placed in the approved HIC.

SECTION 5.0

SPECIFIC WASTE STREAM PROCESSING DESCRIPTIONS

## 5.1 WET RADIOACTIVE WASTE STREAMS

### 5.1.1 Resins

Resins will be accumulated from one or more of the following systems:

(1) Chemical and Volume Control System (CVCS)
(2) Spent Fuel Pool Cooling and Purification System
(3) Liquid Waste Processing System (including the filter/demineralization system)
(4) Boron Recycle System
(5) Boron Thermal Regeneration System
(6) Steam Generator Blowdown System (SGBS)
(7) Condensate Polishing Demineralizer System
(8) Other miscellaneous ion exchange medium as generated

Spent NSSS and SGBS system resins are collected in their respective Spent Resin Storage Tanks (SRSTs). These resins may be transferred directly to the vendors processing skid from the SRSTs or, if desired, routed through the Waste Conditioning Tank. If it is necessary to process secondary condensate polishing powdex resins, they are transferred from the Hot Phase Separator Tank, through the Waste Conditioning Tank, to the vendor's processing skid.

Spent resins will be processed for disposal by dewatering. The curie content and waste classification of each resin batch shall be estimated prior to sluicing of the spent resin to the vendor dewatering skid. Based on these estimates, the proper liner or HIC and cask for transportation and disposal are selected. The resin is transferred to the liner or HIC where it is dewatered utilizing vendor supplied dewatering services per Section 3.1 of this manual. A representative sample of the resin is collected for final calculations of curie content and waste classification. Containers are sealed, surveyed, and labeled, as appropriate, and stored in a designated storage area until they are shipped for disposal.

A flow chart of a typical dewatering processing path is shown on Figure 5-1.

### 5.1.2 Cartridge Filters

Cartridge filters will be accumulated from one or more of the following systems:

(1) Chemical and Volume Control System
(2) Spent Fuel Pool Cooling and Purification System
(3) Liquid Waste Processing System (including filter/demineralization system)
(4) Boron Recycle System
(5) Boron Recovery System
(6) Steam Generator Blowdown System
(7) Miscellaneous

Spent filter cartridges are surveyed for dose rate upon removal from the system. The measured dose rate is used to calculate isotopic content using a dose-to-curie conversion factor and scaling factors per section 4.1 of this manual. Based on the calculated isotopic content, the waste classification and the appropriate process and container for disposal are determined. Normally filters are placed in a liner or HIC and dewatered. However, filters may be dried and handled as DAW, if conditions allow. Upon completion of the processing, containers are sealed, surveyed, and labeled, as appropriate, and stored in a designated storage area until they are shipped for disposal.

For purposes of waste classification, isotopic concentrations of filters dewatered in a liner or HIC should be determined as calculated over the volume of the cartridge filter itself, rather than averaged over the gross volume of the container.

A flow chart of a typical dewatering processing path is shown on Figure 5-1.

### 5.1.3 Evaporator Concentrates

Evaporator concentrates result from operation of evaporators for processing of liquid wastes (e.g., floor drains) and boron recovery. Normally, liquid waste streams are processed through the filter/demineralizer system for release to the environment. The liquid waste evaporator is available as an alternate processing method. The boron recovery evaporator is used to remove boron from reactor grade water and the boric acid concentrates are normally recycled. Therefore, evaporator concentrates from liquid waste processing and boron recovery, that must be processed for disposal, are not normally anticipated. If solidification of evaporator concentrates is required, this PROCESS CONTROL PROGRAM shall be revised, per Technical Specification 6.13, to address solidification.

### 5.1.4 Sludge

Radioactive sludge is accumulated and handled on a case-by-case basis by periodically removing the sludge from various tanks and sumps throughout the plant. Each batch of sludge is sampled for PCP parameters and isotopic content, chemically conditioned, if necessary, and PROCESSED per section 3.1 of this manual. Containers are sealed, surveyed, and labeled, as appropriate, and stored in a designated storage area until they are shipped for disposal.

### 5.1.5 Miscellaneous Liquids

Miscellaneous liquids generated in the station will be collected and processed on a case-by-case basis. Such wastes may include decontamination wastes and chemical wastes collected from the Chemistry Labs. Batches of such waste are isolated, sampled for PCP parameters and isotopic content, chemically conditioned, if necessary, and transferred to the vendor's processing skid where it is PROCESSED per section 3.1 of this manual. Containers are sealed, surveyed, and labeled, as appropriate, and stored in a designated storage area until they are shipped for disposal.

## 5.2 DRY ACTIVE WASTE

Dry Active Waste (DAW) consists of radioactively contaminated or activated waste which contains no liquids. DAW may be compactible, such as paper, plastic and protective clothing, or non-compactible, such as tools or plant equipment. This waste is segregated by station workers at the point of generation into receptacles designated for "clean" or "contaminated" trash. "Clean" receptacles are used to collect trash that is potentially not contaminated. "Contaminated" containers are used to collect waste that is known or suspected to be contaminated. However, for purposes of DAW processing, all waste collected in Radiation Controlled Areas (i.e., that collected in both the "clean" and "contaminated" receptacles) is assumed to be contaminated until it is surveyed and proven clean. Bags are collected from the receptacles, surveyed for external dose rate, and taken to a designated sorting area for processing. Bags below a specified dose rate level, per station procedures, may be opened and the contents surveyed individually for radioactivity. Items found to be not contaminated per station procedures, reusable items, and items not acceptable for disposal as DAW are removed. In general, the contents of bags above the specified dose rate level are not surveyed for contamination, but are examined for reusable items and items not acceptable for disposal as DAW. Contaminated items are then disposed of as DAW. Compactible items are collected and compressed into approved strong, tight containers. Noncompactible items are placed directly into approved strong, tight containers. Containers are sealed, surveyed, and labeled, as appropriate and stored in a designated storage area until they are shipped for disposal.

A flow chart of the DAW processing path is shown on Figure 5-2.

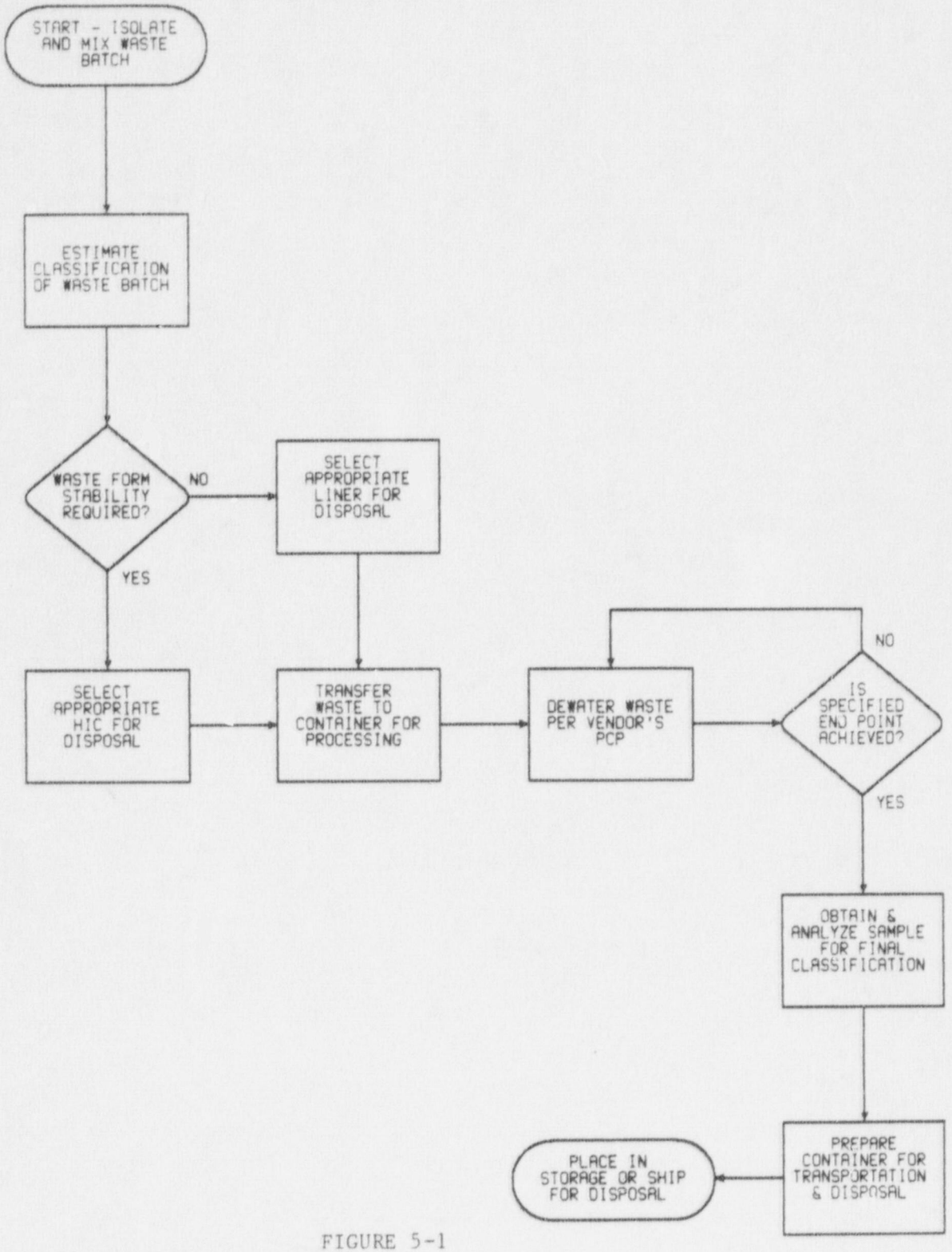


FIGURE 5-1

Dewatering Process Flow Chart

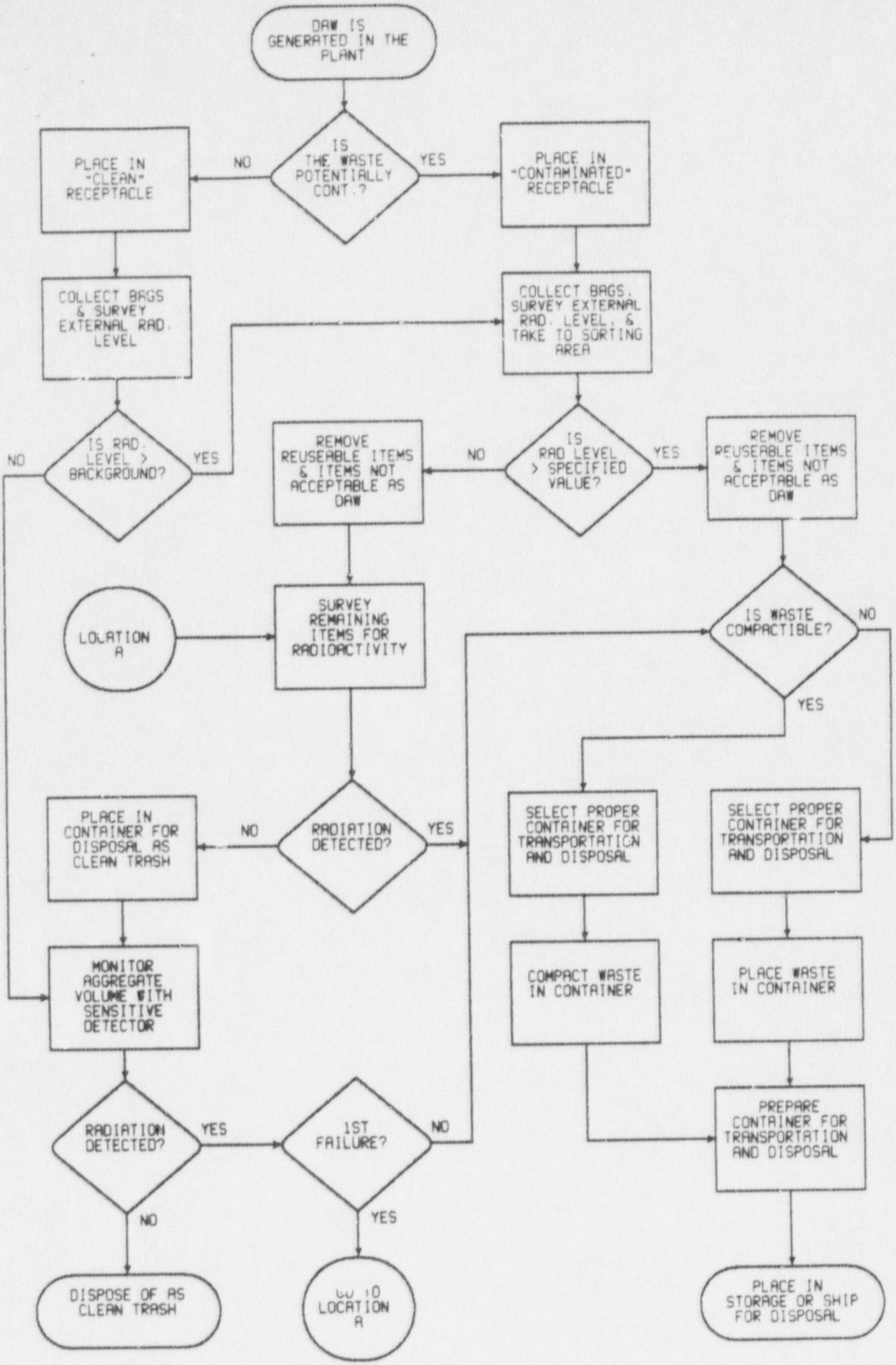


FIGURE 5-2

DAW Process Flow Chart

SECTION 6.0

ADMINISTRATIVE CONTROLS

6.1 PROCEDURES

Activities associated with the implementation of the requirements of this program shall be conducted in accordance with approved station procedures or vendor documents and procedures that have been reviewed and approved per sections 1.4 and 3.2.

6.2 QUALITY ASSURANCE

Quality Assurance related activities for radioactive waste processing are implemented as described in the TU Electric CPSES Quality Assurance Manual. Such activities include:

(1) Review of documents and procedures affecting the processing, packaging, handling, and transportation of radioactive waste.

(2) Review of procurement documents or services.

(3) Perform inspections as designated in applicable processing, packaging, and shipping procedures.

(4) Review applicable vendor QA programs for compliance with Regulatory and TU Electric requirements.

(5) Perform audits of the radioactive waste management program at least once per 24 months.

(Note: Technical Specification Administrative Control 6.5.2.8.i requires that audits of the Process Control Program and implementing procedures be performed under the cognizance of the Operations Review Committee at least once per 24 months.)

(6) Documentation and retention of documentation of waste processing, packaging and shipping activities.

These activities provide assurance that the final waste form, packaging, labeling, and transportation are in accordance with applicable regulations and requirements.

6.3 CHANGES TO THE PCP

Changes to this PCP shall be made in accordance with Technical Specification 6.13. Technical Specification 6.13 requires that changes to the PCP:

(1) Shall be documented and records of reviews performed shall be retained for the duration of the unit Operating License. This documentation shall contain:

(a) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s), and

(b) A determination that the change will maintain the overall conformance of the waste product to existing requirements of Federal, State, or other applicable regulations.

(2) Shall become effective after review and acceptance by SORC, and the approval of the Vice President, Nuclear Operations.

6.4 DOCUMENTATION

Procedures for radioactive waste PROCESSING, packaging, and transportation shall include requirements for maintaining and retaining LLW processing, packaging, and transportation records. Detailed records for each container of waste shall be maintained.

6.5 TRAINING

TU Electric and vendor personnel responsible for waste processing, packaging and transportation activities shall be trained and qualified to ensure that waste PROCESSING is performed in accordance with applicable requirements. Training programs shall establish a schedule for periodic requalification of at least once every two years. TU Electric shall verify the training of vendor personnel.

SECTION 7.0

REFERENCES


7.1 Code of Federal Regulations:

7.1.1 Title 10, Parts 20, 61, and 71
7.1.2 Title 49, Part 173
7.1.3 Title 40, Part 261

7.2 USNRC, Low-Level Waste Licensing Branch, Technical Position on Radioactive Waste Classification, May 1983

7.3 USNRC, Low-Level Waste Licensing Branch, Technical Position on Waste Form, May 1983

7.4 USNRC, Guidelines for Preparation and Implementation of a Solid Waste Process Control Program (Proposed), Draft Revision 3, September 1986

7.5 USNRC, Office of Inspection and Enforcement, IE Information Notices:

7.5.1 IEN 79-09, "Spill of Radioactively Contaminated Resins"
7.5.2 IEN 83-14, "Dewatered Spent Ion Exchange Resin Susceptibility to Exothermic Chemical Reaction"
7.5.3 IEN 85-92, "Surveys of Wastes Before Disposal from Nuclear Reactor Facilities"
7.5.4 IEN 86-20, "Low-Level Radioactive Waste Scaling Factors, 10 CFR Part 61"
7.5.5 IEN 87-03, "Segregation of Hazardous and Low-Level Radioactive Wastes"
7.5.6 IEN 87-07, "Quality Control of Onsite Dewatering/Solidification Operations By Outside Contractors"
7.5.7 IEN 88-08, "Chemical Reactions With Radioactive Waste Solidification Agents"
7.5.8 IEN 89-27, "Limitations on the Use of Waste Forms and High Integrity Containers for the Disposal of Low-Level Radioactive Waste"

7.6 CPSES Technical Specifications, Sections 6.5.2.8.i and 6.13

7.7 CPSES Station Administrative Procedure STA-614, "Radioactive Waste Control"

7.8 CPSES Radiation Protection Instructions:

7.8.1 RPI-203, "Shipment of Radioactive Materials"
7.8.2 RPI-204, "Liquid Waste Processing"
7.8.3 RPI-205, "DAW Processing"
7.8.4 RPI-209, "Radioactive Waste Classification"

7.9 CPSES Chemistry Procedures:

7.9.1 CHM-517, "Chemistry Control of Liquid Waste Systems"
7.9.2 CHM-518, "Radionuclide Verification and Correlation Program"

7.10 CPSES Radioactive Waste Systems Procedure RWS-301, "Radwaste Solidification Systems"

7.11 Vendor Documents

No vendor documents have currently been reviewed and approved by the CPSES SORC. This section shall be revised to reference specific vendor documents approved for use at CPSES upon review and approval by the SORC.

7.12 TU Electric CPSES Quality Assurance Manual