PROPRIETARY

TEMPORARY OPERATING PROCEDURES

Re-issuance of T.O.P. # 90-55 8-31-90

Control No. 90-77 Date: 11/15/90 Requestor: M. R. Chilton

Operating Procedure Involved N-230-5

Duration: 90 Days (Not to exceed 90 days.)

PROCEDURE STATUS

☐ SOP Revision Required

☐ New SOP Required

☒ Temporary - No Permanent Change

☐ Test or Evaluation

Reason for TOP: To process low uranium concentration water.

Procedure: SEE ATTACHED

(If necessary, continue on attached sheets.)

REVIEW AND CONCURRENCE: M. R. Chilton
Manager, Operations
(or other Proponent as applicable)

Manager, Health, Safety & Environment

APPROVAL: J H Mentepey
Senior Vice President



Distribution:

- Manager, Operations (TOP Logbook)
- Proponent (if other than Manager, Operations)

JJD-5

# TEMPORARY OPERATING PROCEDURE

## PRECIPITATING URANIUM IN MISC. DIGESTER

### INTRODUCTION

### PURPOSE/BACKGROUND

Due to the extended shutdown, an excess amount of low uranium concentration water has been generated and needs to be processed. The uranium can easily be removed by raising the water's pH above nine using KOH (Potassium Hydroxide) and allowing the precipitate to settle. After a settling time the supernate (clear liquid over the sediment or precipitate) will be pumped to a raffinate clarifier for additional treatment.

### SAFETY PRECAUTIONS

Wear protective clothing when handling any acid or base (KOH) chemical.

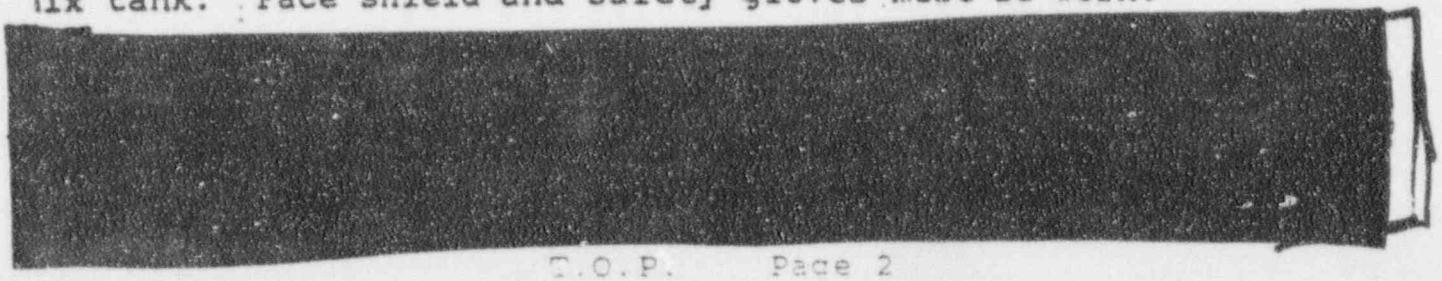
References:
S, Potassium Hydroxide (KOH)
Operating Procedure G-160, "Health and Safety Precautions and requirements"

TOP Procedure:

Record the empty and full Miscellaneous Digester weight, fill the digester approximately 90% full of process liquid. If the process liquid is from a numbered drum, record the drum number.

Agitate and sample (for g/l of U) the digester's contents. With the g/l of U results and number of gallons to be process, use the attached table to determine the amount (lbs.) of KOH needed. Hints: Water weighs approx. 8.3 lbs. per gallon; the Misc. digester weight is displayed in the control room (lbs.). KOH weights approx. 17 lbs per gallon; 4.2 lbs per quart; 2.1 lbs per pint.

After the amount of KOH needed has been determined, fill the Misc. digestion fume scrubber mix tank (number 1530) one half full of water. With the agitator running, add the KOH to the mix tank. Face shield and safety gloves must be worn.



[redacted]

Sample the pump discharge to visually inspect for sludge carry over. Sample for g/l of uranium and log.

[redacted]

DRUMS AND DRUMS LINERS

Good drum liners should be washed for reuse. Bad liners and plastic bags should be discarded as contaminated waste. Cover/paint over old drum numbers and markings. Bad drums should be discarded.

[redacted]

INTERNAL CORRESPONDENCE

PROPRIETARY

**REGULATORY AFFAIRS**

| | | | |
|---|---|---|---|
| TO: | Lee R. Lacey | DATE: | November 19, 1990 |
| FROM: | Joe Bohannon | SUBJECT: | Material Control Instructions/Procedures |

Several SFC procedures address control of materials during maintenance work. In addition, written guidance exists in several forms other than SFC procedures.

G-012 Control of Critical Materials

This SFC procedure is intended to ensure that special alloy materials and designated critical spare parts are properly identified upon receipt in the warehouse. Welding rod identification is also included.

G-205 Inspections

This procedure establishes the requirement for periodic inspection and testing of pressure relief valves, rupture discs, and critical alarms and interlocks. Each relief valve has a unique number, which assigns it to a particular location in the plant. Information contained in the TRIMAX maintenance planning system (discussed below) is used to ensure that relief valves are used in the proper location and service. Engineering maintains independent records of all maintenance work on relief valves.

[redacted]

G-405 Repair of Pressure Vessels and Piping

All pressure vessels and piping at SFC are to be repaired according to this procedure. The procedure mentions that the person doing the repair should refer to the plant piping specifications for ASME or ASTM component specification information. Qualified welding procedure specification numbers are included, and reference is made to the applicable materials of construction for each welding procedure specification. Weld inspections are also covered, with requirements listed by piping class (derived from plant piping specifications).

SFC is certified by the ASME to repair pressure vessels, as discussed below. Certain pressure vessels at SFC have state certificate numbers, and are inspected annually by the state

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inspector. SFC is required to inspect and hydrostatic test these vessels on a regular basis.

Quality Control Manual for the Repair to Boilers and Pressure Vessels in Accordance with the Jurisdictional Authority and the National Board Inspection Code

This document is maintained by Engineering. The state inspector approved the manual. SFC has an ASME repair certificate and an R-stamp (Number R1245) which allows us to repair coded pressure vessels. Actual pressure vessel repairs are conducted under procedure G-405, which is listed above.

Welding Procedures and Procedure Qualification Records

Welding procedures are maintained and controlled by the Engineering Department. They specify the welding procedure by specification number, including type and size of rod for different materials of construction. Engineering currently maintains qualification records of welders qualified for the different welding procedures.

Plant Piping Specifications

Three volumes of plant piping specifications (Bechtel, Stearns-Rogers, and Stearns-Catalytic) are kept in the Engineering Department. They specify the materials to be used for piping, valves, and fittings in various process services at Sequoyah Fuels.

Piping and Instrumentation Diagrams (P&ID's)

SFC Engineering Department maintains these drawings up to date. The P&ID's show the piping class (from pipe specifications) for each pipe. This information can be used in conjunction with the plant piping specifications to determine the proper material of construction for any process service. Engineering controls distribution of the P&ID's. Nine controlled copies are maintained, with one of those in the Maintenance shop and one in the Maintenance manager's office.

TRIMAX Procedures for Relief Valves

Relief valves are removed, rebuilt, and replaced on a preventive maintenance schedule stored in the TRIMAX maintenance planning system. Each relief valve has its own SFC number, which is also cross-referenced to a Warehouse stock number within the TRIMAX system. The TRIMAX information also includes a description f each relief valve. Each SFC relief valve has been chosen to be of the proper materials for the service location.

Major Equipment Listing with Subparts

The Maintenance Department prepared a book over a year ago that lists major equipment at SFC and the associated Warehouse stock items (by part number). Use of this book ensures that the proper subparts are chosen during rebuilding or repair of major equipment.

JEB:nv

from J. Blanco

Page 1 of _____

SEQUOYAH FACILITY QUALITY ASSURANCE PROGRAM

AUDIT RECORD

Audit Code: 4Q 1A 01

Subject audited: G-012 / and other areas Control of Critical Materials

Sub-subjects (if applicable): Other inspections - fabricated equipment pressure relief valves, bellows, gaskets, packings & seals.

Attributes(*):

Procedure: 4 See recommendations.

Training: 4 Implementation Table for G-012, latest revision, did not include Reading requirement for Warehouse staff.

License and Regulations: 2

Documentation: N/A

Implementation: 4 Lack of verification that proper materials & have been received for stock.

Persons contacted: MESTEPEY, COOK, PARKER, CHILTON, FRYER, SHEPLER, LEATHERMAN, WALDEN, REED, ROBERTSON, GRAVES

*May be changed as appropriate.

Performance Indicators: (1) Outstanding, (2) Satisfactory, (3) Meets Minimum Requirements, (4) Deficient

ADDITIONAL COMMENTS:

| AUDIT LISTING |
|---|
| Item 577 - 592 |
| Date |
| Status A |
| Area |
| Manager |

RECOMMENDATIONS FOR IMPROVEMENTS: ATTACHED.

Audited by: J E Blanco Date: 11-6-90

AUDIT RECOMMENDATIONS, G-012 (CONTROL OF CRITICAL MATERIALS)

Short-Term Recommendations:

1. Wetted parts (e.g. valve stems, balls, plugs, pipe fittings, pump parts) which are to be used in critical services (nitric acid, NOx, HF, uranium-bearing liquids or gases) must be inspected and the alloy verified as the part is issued from the Warehouse. Alloys should be identified using either the Texas Nuclear alloy analyzer or other suitable means. Ultimately the Maintenance Supervisor or lead man on a job should be responsible for approving parts and verifying that the correct parts have been installed. Maintenance workers, warehouse clerks, or H&S technicians should determine the alloy type of the needed parts. The person who verifies the alloy type should list the part numbers and the alloys identified along with signature on the work order form. These requirements should be incorporated into G-012.

   To facilitate use of the alloy analyzer, the analyzer may need to be moved from the Stearns building to a box at the warehouse counter (clean side), where it will be accessible by both the Warehouse and Maintenance departments. Consideration will need to be given to obtaining spare battery sets, alternate means of alloy ID in case the Texas Nuclear unit is broken, allowance for unit warm-up time, and provision for spare sets of keys to supervisory personnel to allow ready access to the box.

2. Develop and conduct a training course for use of the Alloy Analyzer. More approved users are needed.

3. Part number and alloy color code should be maintained on the part (or bag) until it is ready for installation.

4. Warehouse should not issue a part over the counter for installation in the plant without specification of a part number in writing from the requester. This removes the burden of selecting or identifying parts from warehouse personnel and places it on Maintenance where it belongs. Personal or safety equipment (e.g. earplugs, safety glasses) would be excluded from this requirement. These statements could fit under 6.3 of G-012.

5. G-012 should refer to process services in which certain materials of construction are not to be used. This information could be added as 6.4 of G-012. Suggested wording follows:

   SFC piping specifications should be consulted when selecting a material of construction. Substitutions must be approved by Engineering.

Subject: CONTROL OF CRITICAL MATERIALS

**REVIEWED AND APPROVED BY:**

Manager, Engineering — J D Fraser

Manager, Laboratory — D R Hahn

Manager, Maintenance — Richard A Parker

Manager, Operations — J H Mastejey

Radiation Safety Officer/ Manager, Health & Safety — Michael R Yeas

PORC Chairman/ Manager, Procedures & Training — J Santos — 4/20/89 Date

**APPROVED BY:**

General Manager (Vice President Administration) — Oliver D Kingsley — 4-20-89 Date

This procedure is effective 4/20/89.

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TRAINING/IMPLEMENTATION TABLE

The following implementation action is required:

| Department | Action Level | | | | |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 |
| Engineering | ✓ | | | | |
| Laboratory | ✓ | | | | |
| Maintenance | | ✓ SUPERVISORS | | | |
| Operations | ✓ | | | | |
| Health & Safety | ✓ | | | | |
| Security | ✓ | | | | |
| Administration | ✓ | | | | |
| Other | | | | | |

* Annual review completed 4/20/89

INTERNAL CORRESPONDENCE

11/14/90
From: Reggie Cook.

| SEQUOYAH FUELS CORPORATION | CONTROLLER DIVISION |
|---|---|
| TO: Gary Barrett | DATE: November 12, 1990 |
| FROM: Reggie Cook | SUBJECT: Incident Report 90-9-3 (Valve Stem) |

The following corrective actions have been taken.

- All parts covered under G-012 have been marked and reviewed.
- The Quality Assurance manager is doing a random test on all shelf stock using the metal analyzer.
- Security personnel will spend two hours of their day shift rotation in training in the warehouse.
- The Quality Assurance auditor is reviewing procedure G-012 to correct inadequacies in the procedure.
- Vendor marking of valves and valve parts is done by stamped information. Other vendor markings have been tried and were not feasible.

It should be noted that the ultimate responsibility for part installation lies with the installer. It is up to that person to know or have the tools to find out what he is working with. The changes recommended in G-012 should address some of this disparity.

# INCIDENT REPORT

No. _____



| Corrective Action Assignments | Assigned to | Target Date | Completed |
|---|---|---|---|
| G-012 Compliance Audit of valve parts. | R. Cook | 10/5/90 | |
| Educational Program for guards in warehouse functions. | R. Cook | 10/5/90 | |
| Receiving of parts through metal analyzer - investigate & recommend | R. Cook | 10/12/90 | |
| Review incident with maintenance | R. Parker | 10/5/90 | |
| Vendor marking of critical valve parts list of alternatives | R. Cook | 10/12/90 | |

Reviewed by: M. Clark — Department Manager — 9/28/90 — Date

M. [illegible] — Manager, Health, Safety, & Environment — 10/1/90 — Date

J H Meatyard — Senior Vice President — 10-2-90 — Date

Distribution: Vice Presidents
Department Managers
Safety Engineer

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Corrective Actions Completed: _____ Safety Engineer _____ Date

Distribution: file