



**NEVADA NUCLEAR WASTE STORAGE INVESTIGATIONS**

**NNWSI-SOP-03-01**

**Revision 0**

**UNCONTROLLED**

**ENGINEERING, CONSTRUCTION, AND SUPPORT  
SERVICE AT THE NTS**

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PDR WASTE  
WM-11 PDR

**UNITED STATES DEPARTMENT OF ENERGY  
NEVADA OPERATIONS OFFICE**

ENGINEERING, CONSTRUCTION, AND SUPPORT SERVICES AT THE NEVADA TEST SITE

Originated by: M. KOWALEWSKI

Approved by/date:

Donald L. Kuhl 8/27/84  
WMPO Director

Effective date: 09/28/84

John R. Smith 9-1-84  
DOE/NV QAD Director

UNCONTROLLED

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Distribution	Used by	Info
DOE/NV - WMPO Director	X	
DOE/NV - QAD Director		X
DOE/NV - NTSO Director	X	
NTS/ERL - Project Record Center		X
SAI - T&MSS Technical Project Officer	X	
SAI - QASC QA Manager	X	
LANL - Technical Project Officer	X	
LLNL - Technical Project Officer	X	
SNL - Technical Project Officer	X	
USGS - Technical Project Officer	X	
F&S - Vice President & General Manager	X	
H&N - Vice President & General Manager	X	
REECo - General Manager		

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## 1.0 PURPOSE AND SCOPE

This procedure describes the methods to be used by all Nevada Nuclear Waste Storage Investigations Project (NNWSI) Participating Organizations and Nevada Test Site Contractors for engineering, construction, drilling, mining, and support services performed within the NNWSI Project. Compliance with this procedure will provide the quality, control, and assurance required by the NNWSI Project Quality Assurance Plan NVO-196-17 (Rev. 2).

## 2.0 APPLICABILITY

This procedure applies to all work performed by Participating Organizations and Contractors in support of the NNWSI Project in accord with the U.S. Department of Energy NTS-SOP-6001.

## 3.0 DEFINITIONS (See NNWSI-SOP-02-01, Rev. 0, Appendix A)

### 3.1 Additional Definitions

3.1.1 Criteria Letter or Work Request - an approved document transmitted by the NNWSI Project Participating Organizations to the DOE/NTSO Director that describes in detail the action desired, the date required, and the quality requirements to be applied. It may be accompanied by sketches, drawings, plans, or other data necessary to delineate and clarify the extent of the request. Required inspection activity hold-and-witness points shall be provided for inclusion in the activity documents that are originated by the assigned contractor.

3.1.2 Title I - preliminary services provided by the Architect-Engineers (A-E) contractor. See NTS-SOP-6001 Appendix for details.

3.1.3 Title II - design services provided by the A-E contractor. See NTS-SOP-6001 Appendix for details.

3.1.4 Title III - monitoring, inspection, and documentation of construction provided by the A-E contractor. See NTS-SOP-6001 Appendix for details.

3.1.5 Requests for Work Order Modifications (RWOM)-initiated by the Participating Organization or NTS contractor and processed by the A-E for unusual job conditions or approved change notices that request NTSO approval. See NTS-SOP-6001 Appendix and Exhibit 3 for details.

3.1.6 Nevada Test Site Office - the DOE/NV office in Mercury, Nevada, that plans, schedules, coordinates, and administers A-E and contractors' activities on authorized construction, drilling, and mining projects both on and adjacent to the NTS for WMPO under the DOE/NV matrix support system.

3.1.7 Inspection Activity Hold-and-Witness Points - activity milestones that require inspection or surveillance before work may proceed beyond that point. These points can be defined by the Participating Organization, NTSO, NTS Support Contractors or WMPO staff.

#### 4.0 RESPONSIBILITIES

4.1 Participating Organizations shall provide criteria letters or work requests with attachments for the NTSO Director's approval that adequately describe the action desired, the date required, and the quality level requirements. A list will also be provided that delineates those Participating Organization's personnel that are authorized to review and approve documents submitted by the NTS Support Contractors.

4.2 The Nevada Test Site Office Director shall ensure that the contents of criteria letters or work requests and supporting documents are adequate to delineate and clarify the extent of the work approved for assignment by NTSO.

4.3 NTS Contractors shall accomplish the assigned work orders and design requests in accordance with U.S. Department of Energy Standard Operating Procedure NTS-6001 and Appendices, U.S. Atomic Energy Commission/Energy Research and

Development Administration Manual NV Chapter 6101, U.S. DOE Order 6430.1, and the supplementing NNWSI Project requirements of this procedure.

## 5.0 PROCEDURE

5.1 Criteria letters or work requests shall be developed by the Participating Organization requesting engineering, construction, and support services activities. The criteria letters or work requests shall be submitted both to the NTSO Director for approval and to WMPO for information.

5.1.1 The criteria letter or work request shall contain sufficient technical and quality requirements to provide a basis for the activities that are to be performed. The Participating Organizations shall denote any hold-and-witness points in the criteria letter or work request.

5.1.2 The criteria letter shall be reviewed, approved, and signed by the Technical Project Office (TPO) and a QA representative of the Participating Organization.

5.2 Under the WMPO matrix personnel support system that is identified in NVO-196-17, NTSO shall review and approve the criteria letter or work request. Requirements for the NTSO approval include, but are not limited to, an adequate description of the action desired, the appropriate funding, the date required, and the quality level designation I, II, or III as determined in accordance with the Participating Organizations approved NNWSI Project Quality Assurance Program Plan and implementing procedures. Sketches, drawings, plans, or data necessary to delineate and clarify the extent of the request are also expected to accompany the criteria letter or work request.

5.2.1 Criteria letters or work requests and any attachments that are approved by NTSO will be assigned and forwarded to the NTS A-E Contractor by the NTSO Director.

5.2.2 Participating Organizations shall use their internal system of change control as a vehicle for conveying and controlling changes to the criteria letters or work requests.

5.3 Approved criteria letters or work requests that generate work orders shall follow the order of events shown on the upper level of Exhibit 1.

5.3.1 An architect-engineering contractor, that supports NTS activities shall prepare the work order (see Exhibit 2) and estimate in accordance with approved internal operating procedures after the assignment has been received from NTSO. The work order scope shall include reference to the technical and quality requirements of the criteria letter or work request.

5.3.1.2 The work order then is routed for either facility design drawing development or other contractor support activity. NNWSI Project Participating Organizations shall provide the support contractor with a RWOM when changes in the criteria are required.

5.3.1.3 Drawings and supporting documents shall be prepared and support activities shall be performed in accordance with the Contractor's approved NNWSI Project QAPP and implementing procedures to the quality requirements specified in the criteria letter.

5.3.1.4 A document review and evaluation meeting that shall be scheduled and attended by the NTSO Project Engineer and by representatives of the Participating Organization, A-E, and other involved NTS Contractors, shall document any required changes and additional hold-and-witness points agreed upon. Copies of the meeting minutes shall be provided for the responsible WMPO Branch Chief.

5.3.1.5 As a result of the review and evaluation meeting, inspection activity hold-and-witness points shall either be detailed on sketches and drawings or described in the specifications, purchase orders, test plans, and any other documents originated. Work will not commence beyond these hold-and-witness points until the inspection, test, surveillance, or audit required by the Participating Organization or NTS Contractor is accomplished.

5.3.2 Work orders and any final generated documents then shall be transmitted by the Contractor to the Participating Organization's authorized reviewer for approval.

5.3.3 The Participating Organization's approved work orders and associated documents then shall be sent to NTSO for approval.

5.3.4 Approved NTSO work orders and attachments then shall be sent to Reynolds Electrical & Engineering Company (REECO) for distribution. A copy of the approved work order package also shall be sent either to the Participating Organization and WMPO Geologic Investigations or Technology Development and Engineering Branch Chief.

5.3.5 Requests for changes shall be processed by a Request for Work Order Modification Form NV-144 (10/69) (see Exhibit 3). A detailed scope of the RWOM work with any attachments is cost estimated and submitted to the Participating Organization, and NTSO for approval.

5.4 Criteria letters or work requests that directly generate design activities by an architect-engineering contractor shall follow the order of events shown on the lower level of Exhibit 1.

5.4.1 An architect-engineering contractor shall prepare Title I - preliminary services, and after NTSO approval Title II - design services, or Title I/II - combined services upon receipt of the NTSO approved authorization document. The architect-engineer shall follow their approved NNWSI Project QAPP and implementing procedures for the quality level requirements designated.

5.4.1.1 The reports of design review meetings, which are to be scheduled by the NTSO Project Engineer for the purpose of reviewing completed Title I, Title II, or combined Title I/II documents shall be distributed by the NTSO Project Engineer to the NTSO Director, to the Participating Organization, to WMPO, to the A-E, and to other NTS Contractors involved. Required changes and/or additional agreed upon hold-and-witness points shall be approved and documented.

5.4.1.2 Approved inspection activity hold and witness points shall be either detailed on the sketches and drawings, or described in the specifications, purchase orders, test plans, or other appropriate documents. Work will not commence beyond these hold-and-witness points until the inspection, test,

surveillance, or audit required by the Participating Organization or NTS Contractor is accomplished.

5.4.2 Design review meeting required changes shall be performed on the sketches, drawings, specifications, documents, plans, and other data that has been developed and transmitted by the A-E to the NNWSI Participating Organization's authorized reviewer for approval and signature. Any additional requested changes then shall be made by the A-E for final document approval.

5.4.3 Reviewed and approved A-E originals or corrected documents then shall be sent to NTSO for approval, correction and subsequent distribution for construction by the A-E. Final document copies shall be provided also for the Participating Organization; for the Director, NTSO; for the WMPO, and for either the Geologic Investigations or Technology Development and Engineering Branch Chief.

5.5 Performance of the approved requested activity or Title III construction activity then will be inspected by the NTS Contractor's designated representative. The representative will verify that the activity is being performed in accordance with the drawings, specifications, and any other documents or data provided. Reports of progress, nonconformances, requests for work order modifications and/or descriptions of changed field conditions will be provided to NTSO, to WMPO, and to the Participating Organization for information, direction, and action. Approved NNWSI Project QAPP and implementing procedures for the quality level requirement shall be followed.

5.6 Surveillances and audits of the activities will be performed by WMPO and/or NTSO representatives in accordance with NNWSI-QMP-07-01, Rev. 0, and QMP-18-01, Rev. 0, respectively. Reports of these scheduled and unscheduled visits shall be prepared, distributed to the parties involved, and made available for review, nonconformance reporting, and corrective action followup.

5.7 At the completion of the requested work, all documents listed in the Participating Organization's and Contractor's records list that has been approved by WMPO shall be collected for transmittal to the project record center in accordance with the approved NNWSI Project Records Management Plan, NNWSI-SOP-17-01.

## 6.0 REFERENCES

U.S. Department of Energy Standard Operating Procedure, NTS-SOP-6001, Engineering, Construction, and Support Services, revised November 24, 1981.

U.S. Atomic Energy Commission/Energy Research and Development Administration Manual, NV Chapter 6101, Management and Administration of the Construction Program, January 30, 1975.

DOE Order 6430.1, General Design Criteria Manual.

Nevada Nuclear Waste Storage Investigations Quality Assurance Plan, NVO-196-17.

NNWSI QMP-07-01, Rev. 0, Surveillances.

NNWSI QMP-18-01, Rev. 0, Audits.

NNWSI-SOP-15-01, Nonconformance Control System.

NNWSI-SOP-17-01, Records Management Plan.

# NNWSI-SOP-03-01

## CRITERIA/WORK ORDERS/DRAWINGS/ACTIVITIES

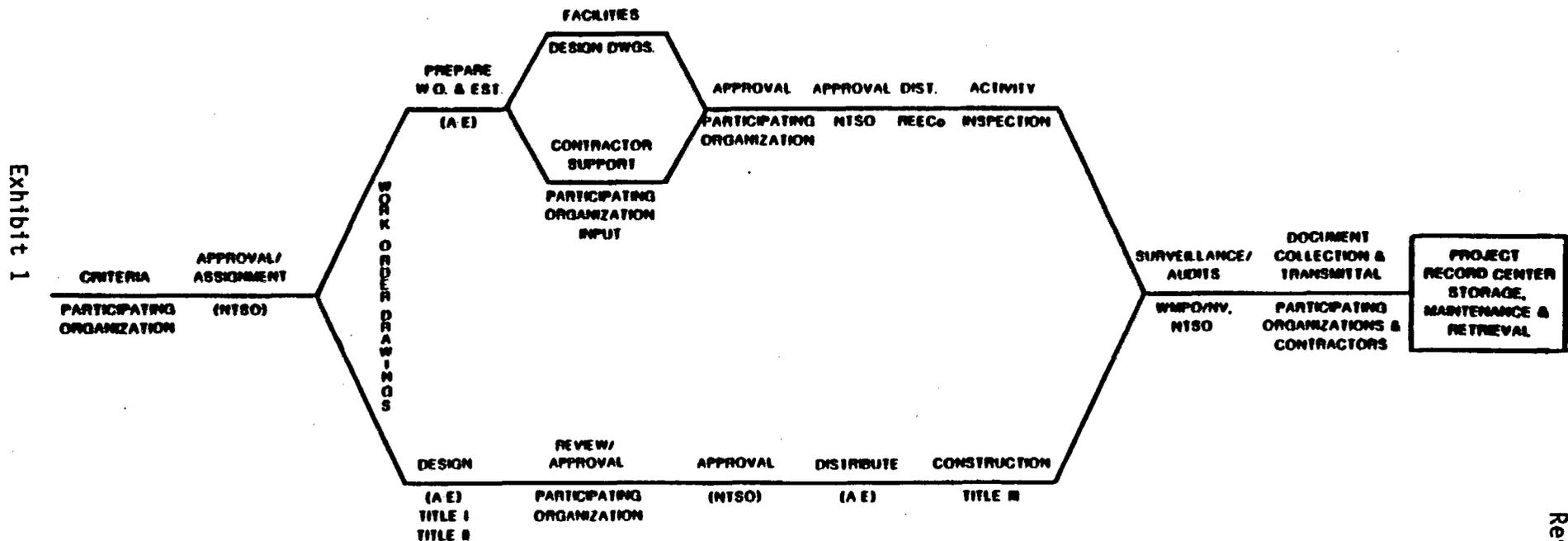


FIGURE 1

# WORK ORDER

To: Reynolds Electrical & Engineering Co., Inc.

Number: \_\_\_\_\_

Engineering Contractor: \_\_\_\_\_

By: \_\_\_\_\_

Date Prepared: \_\_\_\_\_ Proj. Cost Symbol: \_\_\_\_\_

Required Completion } \_\_\_\_\_ Budget Activity: \_\_\_\_\_  
Expiration Date: }

Work Order No.
Classification:

Area Number: \_\_\_\_\_ User: \_\_\_\_\_ Requested by: \_\_\_\_\_

Fund Approval: \_\_\_\_\_ Date: \_\_\_\_\_

ERDA Approval: \_\_\_\_\_ Date: \_\_\_\_\_

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## REQUIREMENT

TITLE:

SCOPE OF WORK:

Responsibility assigned to:

Actual Completion Date: \_\_\_\_\_ Estimated Cost: \_\_\_\_\_

- REQUEST FOR WORK ORDER MODIFICATION
- DESCRIPTION OF CHANGED FIELD CONDITIONS

Date \_\_\_\_\_  
 Station No. \_\_\_\_\_  
 Work Order No. \_\_\_\_\_  
 Work Order Modification No. \_\_\_\_\_

TO: NEVADA TEST SITE SUPPORT OFFICE, AEC FROM: \_\_\_\_\_  
REQUESTOR ORG.

DETAIL SCOPE OF WORK:

ATTACHMENTS:

APPROVED FOR:

- CFFF ACTION
- RECORD DOCUMENTATION
- OTHER \_\_\_\_\_

ESTIMATED BY:

DATE:

LABOR	LABOR LOAD	MATERIAL	EQUIPMENT	MAT'L HANDLING & OTHER	G & A	TOTAL

USER ORG DATE A/E REPRESENTATIVE ORG. DATE NTSSO PROJECT ENGINEER DATE

Check for Distribution

- NTSSO PROJECT ENGINEER
- USER

- CFFF PROJECT MANAGER
- CFFF BUDGET & CONTROL
- CFFF W/O SECTION

- A-E PROJECT ENGINEER
- A-E ESTIMATING MERCURY
- A-E ESTIMATING AREA
- A-E CENTRAL CONTROL