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Date: June 8, 1988

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NUCLEAR WASTE MANAGEMENT PROGRAM

CONTROLLED COPY NO. 83

Subject:

(See Below)

Approved:

(See Page 2)

TECHNICAL PROCEDURE

Establishment of Criteria for
Metal Barrier Selection8807110456 880608
PDR WASTE
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Originated by: William G. Halsey ^{7/7/88} Date
 William G. Halsey

Approved by: Daniel McCright ^{7/7/88} Date
 Daniel McCright
 Key Reviewer
 Task Leader

Approved by: David W. Short ^{7/7/88} Date
 David Short
 Deputy Project Leader
 for Nevada Nuclear Waste
 Storage Investigations

Reviewed by: John J. Bronkers ^{7/7/88} Date
 John J. Bronkers
 Deputy NWMP Leader for
 Quality Assurance

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3A.3.1 PURPOSE

This procedure describes how the selection criteria for the NNWSI waste container metal barrier material will be established.

3A.3.2 SCOPE

Establishment of these criteria as described in section 3.2.2 of the Scientific Investigation Plan for the Metal Barrier Selection and Testing Task - WBS 1.2.2.3.2 is the function of activity E-20-15 "Establishment of criteria for metal barrier selection". This activity has been assigned Quality Assurance Level I.

3.A.3.3 RESPONSIBILITIES

The Task Leader is responsible for implementing this procedure. The Task Leader may designate a Principal Investigator (P.I.) for activity E-20-15 with assigned responsibility for establishing the selection criteria.

3.A.3.4 PROCEDURE

Criteria for selecting the container material are established by the Task Leader or his designated P.I. Components of the criteria include: Topical Structure (3A.3.4.1), Detailed Criteria (3A.3.4.2), Minimum Scores (3A.3.4.3), and Weighting Factors (3A.3.4.4). This is to allow the selection process to include both a pass/fail grade and a quantitative figure of merit score.

Each component of the criteria is established based on extensive technical inputs which can be of either an objective or subjective nature, including the professional judgement of the P.I. and others. The input can be either formal or informal. Because informal input is difficult to document, an explanatory addendum is attached to the criteria. This addendum will explain the rationale for the criteria and summarize the technical comments and conclusions obtained in establishing them.

The draft selection criteria and addendum receive a formal internal technical review from the Task Leader, Technical Area Leader, and their designees. The results of these technical reviews are documented.

Because of the subjective nature of some aspects of the criteria and the variety of professional opinions possible on these topics, an independent peer review of the criteria is conducted in accordance with 033-NWMP-P 2.2 "Peer Review". Peer review comments are considered prior to issuance of the final selection criteria report. The final selection criteria and the addendum explaining the rationale for their selection are documented in the final selection criteria report which is issued upon project approval.

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3A.3.4.1 Topical Structure

The purpose of the topical structure is to organize the important issues to be considered in the selection. Topic areas are material independent and address the performance, regulatory, and engineering requirements of the waste container. The list of preliminary selection criteria from Section 8.3.5.9.2.1.1 of the Site Characterization Plan - Consultation Draft serves as the primary input to the structure. Other inputs are the regulatory requirements (10 CFR 60.113.a.1.A-B and 60.135.a-b), preliminary container design, and the reference repository environment.

3A.3.4.2 Detailed Criteria

The purpose of the detailed criteria is to divide the topical structure into components that can be quantified by scalable parameters. These parameters include measureable properties and qualitative judgements. The detailed criteria and parameters are specific to categories of materials or to individual materials. Inputs include the topical structure and its inputs, degradation mode surveys, and information from both NNWSI and the open literature.

3A.3.4.3 Minimum Acceptable Scores

The purpose of these minimum acceptable scores is to set limiting values on the scalable parameters to assure that performance, regulatory, and engineering requirements are met. Inputs include the topical structure, the detailed criteria, and their inputs.

3A.3.4.4 Weighting Factors

The purpose of the weighting factors is to balance the relative importance of different selection criteria. Weighting factors are established for the detailed criteria within a topical area as well as for the topical areas themselves. This allows the quantitative values of the detailed criteria to be combined into a total score for each candidate material during the selection process. Inputs include the topical structure, the detailed criteria, and their inputs.

3A.3.5 RECORDS

The documents resulting from the application of this procedure are quality assurance records. These records are collected, stored, and maintained in accordance with procedures under Tab 033-NWMP-P 17.0, "Quality Assurance Records". Documents included in the QA record are:

- The draft selection criteria and explanatory addendum.
- Technical review comments on the draft selection criteria.
- Peer review documentation as provided under 033-NWMP-P 2.2, "Peer Review".
- References cited from the open literature.

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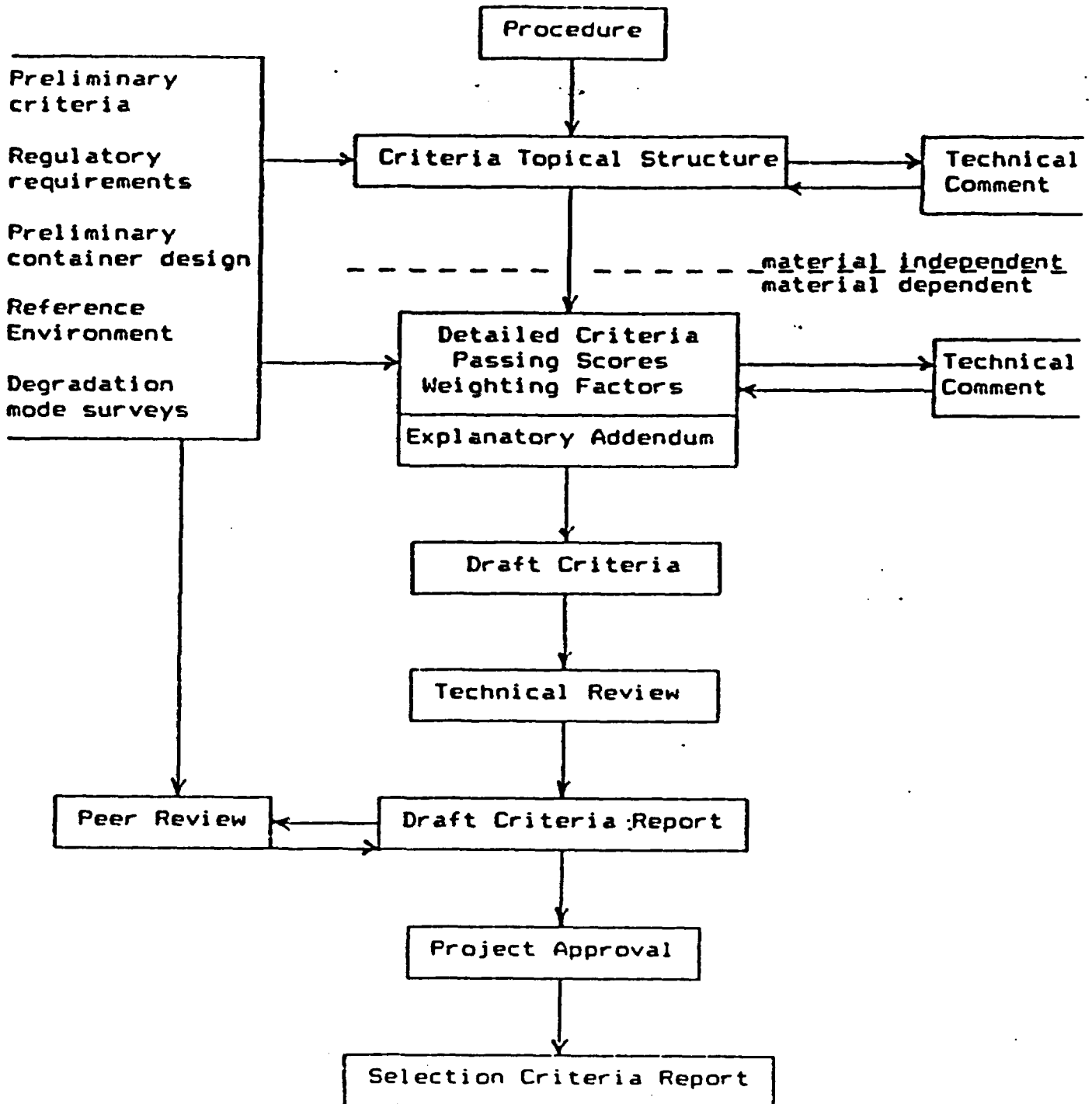
3A.3.6 REFERENCES

Scientific Investigation Plan for NNWSI WBS Element 1.2.2.3.2, Metal Barrier Selection and Testing. October 20, 1987. Lawrence Livermore National Laboratory. UCID 21262.

Site Characterization Plan - Consultation Draft, Yucca Mountain Site, Nevada Research and Development Area, Nevada. DOE/RW-0160 January 1988, U.S. DOE Office of Civilian Radioactive Waste Management, Washington D.C.

Title 10, Chapter 1, Code of Federal Regulations - Energy, Part 60, Disposal of High-Level Radioactive Wastes in Geologic Repositories: Licensing Procedures. U.S. Nuclear Regulatory Commission. June 1983.

3A.3.7 INFORMATION FLOW CHART FOR ACTIVITY E-20-15



LAWRENCE LIVERMORE NATIONAL LABORATORY
NUCLEAR WASTE MANAGEMENT PROJECT
P.O. BOX 808, L-202
LIVERMORE, CA 94550
Ext: 3-7938

CONTROLLED DOCUMENT
TRANSMITTAL RECORD

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7-8-88
(Transmittal date)

TO: <div style="text-align: center; margin-top: 10px;"><u>J. Kennedy</u> (Name) <u>NRC</u> (Organization)</div>	FROM: <div style="text-align: center; margin-top: 10px;"><u>John Dronkers</u> (Name) <u>LLNL/NWMP</u> (Organization)</div>																																	
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<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">INSTRUCTIONS/REMARKS (IF YOU HAVE ANY QUESTIONS REGARDING THIS MATERIAL, PLEASE CALL: 423-7938)</div> <div style="border: 1px solid black; height: 100px;"></div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">PLEASE SIGN BELOW AND RETURN TO: PAT WALDEN, L-202</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"><input type="checkbox"/> Marked previous issues "obsolete", "superseded", or similar</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"><input type="checkbox"/> Destroy previous issues</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"><input type="checkbox"/> I am returning old material with this transmittal record</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"><input type="checkbox"/> New issue (no previous copies received)</div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"><div style="border-top: 1px solid black; width: 45%; text-align: center;">(Signature)</div><div style="border-top: 1px solid black; width: 45%; text-align: center;">(Date)</div></div>																																	