

HLTR TA ON TP/2

AUG 17 1988

MEMORANDUM FOR: John J. Linehan, Acting Chief
Operations Branch, HLWM

FROM: Ronald L. Ballard, Chief
Technical Review Branch, HLWM

SUBJECT: HLTR ASSISTANCE ON TECHNICAL POSITION: ANNOTATED OUTLINES

Enclosed are annotated outlines, numbers 4 and 6, entitled, "Technical Position on Repository Design" and "Technical Position on Waste Retrievability" which were discussed in my August 16, 1988 memorandum to you. They are the last of the outlines that will be sent to you, bringing the total to 27. As I mentioned in my memorandum, of the 2 remaining outlines one will probably be cancelled and the other will be delayed pending progress on closely related rulemaking.

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Ronald L. Ballard, Chief
Technical Review Branch, HLWM

Attachments:
As stated

cc: R. Johnson, HLOB
J. Holonich, HLOB

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8/18/88



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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Technical Review Branch, HLWM

Attachments:
As stated

cc: R. Johnson, HLOB
J. Holonich, HLOB

TP Title: Technical Position on Repository Design
Lead Technical Contact: Naiem S. Tanious
Additional Technical Contacts: None

1.0 Regulatory Evaluation

The repository design addresses pre-closure as well as post-closure periods, each period with its own requirements. The pre-closure performance objectives for the repository operations area are covered under 60.111(a), radiological safety, and 60.111(b); retrievability. More specific criteria are also given for many of the repository design elements, these include underground openings 133(e), thermal load 133(i), ventilation system 133(g), engineered barrier 133(h), shafts and boreholes 134(a), rock excavation 133(b), and design testing 142(a). The post-closure overall system performance is under 60.112. Specific requirements for radionuclide releases from the engineered barrier system are addressed in 60.113(a)(1), and for waste containment and isolation in 113(a)(1)(ii)(A) and (B).

2.0 Summary of Guidance

This TP will contain guidance on: (1) all the operations area design elements explicitly listed in 10 CFR 60, (2) methodology for identification of the design component function whether it is pre-closure, post-closure, or both, (3) methodology for identification of systems, structures, and components important to safety, isolation, and retrievability, (4) physical integration of the ESF in the repository, (5) validation of the repository design specifications by testing, and (6) use of available technology for repository construction and waste emplacement.

3.0 Justification of Staff Work

The DOE is required to submit to the NRC a conceptual design report with the SCP. Furthermore, during the SCP design activities will continue to advance the design using field data from the in situ testing at the repository horizon. At present there is no comprehensive TP that cover the many aspects of the repository design.

TP SCHEDULE (1)

Milestone	Elapsed Time(wk)	Accum Time(wk)	Date
Initiate need for TP	0	0	6/1/89
Obtain PPSAS Number	1	1	6/1/89
Preliminary Outline Complete	2	3	7/1/89
Internal Draft	16	19	12/1/89
Internal NRC Comments	4	23	1/31/90
Public-Comment Draft	8	31	3/31/90
Federal Register Notice/ Transmittal to ACNW	3	34	4/30/90
Public Comment Period Closed	8	42	6/30/90
Public Meeting on disposition of comments	8	50	8/30/90
ACNW Meeting	2	52	9/30/90
Final TP	8	60	1/1/91

(1) To be completed by individual author for each TP. This should be the date that work on the TP will actually begin.

TP Title: Technical Position on Waste Retrievability
Lead Technical Contact: Naiem S. Tanious
Additional Technical Contact: None

1.0 Regulatory Evaluations

Waste Retrievability is a performance objective during the pre-closure period, this objective calls for "designing the geologic repository operations area to preserve the option of waste retrieval (10 CFR 60.111(b)). Explicit requirements in the rule that pertains to retrievability include: (1) designing stable openings (133(e)(1), and (2) a ventilation system that operate separate circuits for the excavation and emplacement areas, and control transport and releases of radioactive particulates.

2.0 Summary of Guidance

This TP will contain guidance on: (1) design of stable openings (drifts) during retrieval, (2) amount of needed drift support, (3) use of appropriate of models/tests for prediction of rock temperatures in emplacement boreholes, and drifts during retrieval, (4) amount of air cooling needed to allow re-entry, and (5) use (or development) of systems and equipment for retrieval operations.

3.0 Justification for Staff Effort

Retrievability is a major requirement that impacts many aspects of the repository design. This TP is needed because the rule only covers the requirements in a general way, and in order to insure DOE compliance, a TP that covers various aspects of retrievability is very much needed.

TP SCHEDULE (1)

Milestone	Elapsed Time(wk)	Accum Time(wk)	Date
Initiate need for TP	0	0	12/1/88
Obtain PPSAS Number	1	1	12/1/88
Preliminary Outline Complete	2	3	12/15/88
Internal Draft	16	19	4/1/89
Internal NRC Comments	4	23	5/1/89
Public-Comment Draft	8	31	7/1/89
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Public Meeting on disposition of comments	8	50	12/31/89
ACNW Meeting	2	52	1/1/90
Final TP	8	60	4/1/90

(1) To be completed by individual author for each TP. This should be the date that work on the TP will actually begin.