

MGDS License Application Annotated Outline

Section 8.1 Performance Confirmation for the Natural Systems of the Geologic Setting

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Date: 03/31/95

8.1 PERFORMANCE CONFIRMATION FOR THE NATURAL SYSTEMS OF THE GEOLOGIC SETTING

The Performance Confirmation Program for the natural systems of the geologic setting is focused on four major topics; the geologic system, the hydrologic system, the geochemical system, and the climatological and meteorological systems. [The interaction or coupling among these systems has been considered including the effects of natural thermal gradients and thermal loading (TBD) where it affects the performance of the repository and/or the design and implementation of the confirmation tests.]

The performance confirmation activities described below are required to confirm the findings discussed in Chapters 3, 5, and 6. [Note: The activities described in this section will be periodically updated as additional information concerning the natural system is obtained during the characterization of Yucca Mountain.]

[The Performance Confirmation Program for the natural system clearly defines the tests that have been conducted and those that are planned to evaluate and confirm the geologic, hydrologic, geochemical, and climatological and meteorological systems as they respond to the effects of the repository [INN 8.1-1]. These tests are initiated during site characterization and will be continued through construction and operation until permanent closure. The baseline characterization information and its compliance with 10 CFR 60.122 are presented in Chapter 3. The expected response of the natural systems to the repository is discussed in Chapter 6 as it relates to post-closure performance assessment. The expected response of the systems to the repository was defined and the expected levels of parameter changes were developed [INN 8.1-1]. The confirmation tests that are conducted are designed to determine whether changes are within the ranges expected. Where results of testing fall outside the range expected, additional performance assessment evaluations of the total system will be conducted (Section 8.6).]

8.1.1 Geologic System

The geologic system confirmation program is intended to demonstrate that waste emplacement has no adverse effects on overall performance, to monitor and analyze changes from baseline conditions, and to confirm that the design assumptions and parameters are correct. [The baseline site characterization results (TBD) are described in Section 3.1.1 and are summarized in this Section. Performance confirmation activities for the geologic system are described in the Performance Confirmation Program Plan [INN 8.1-1]. The expected changes in the geologic system are described in Chapter 6 and are summarized in Table 8.1.1-1 [INN 8.1.1-1]. Also included are the performance confirmation tests that remain to be conducted for confirmation of the behavior of the geologic system. (Note: The remaining text of this Section will be completed using the information needs cited above and [INN 8.1.2-1] which will contain the results of monitoring confirmation activities during the baseline phase of performance confirmation.)]

8.1.2 Hydrologic System

An important part of the Performance Confirmation Program is the evaluation of the hydrologic system. [Like the geologic system, the hydrologic system confirmation program demonstrates that there are no adverse effects on overall performance from the waste emplacement, monitors and analyzes changes from baseline conditions, and confirms design assumptions and parameters. The baseline phase results of performance confirmation activities for the hydrologic system are presented in Table 8.1.2-1 and are described in this Section [INN 8.1.2-1 and INN 8.1.2-2]. (Note: The site characterization information presented in Chapter 3, Chapter 6, [INN 8.1.2-1] and [INN 8.1.2-2] will be used to complete this section.)]

8.1.3 Geochemical System

[The Performance Confirmation Program for the evaluation of the geochemical system is described below and a summary of baseline results and work to be completed is presented in Table 8.1.3-1 [INN 8.1-1, INN 8.1.3-1, and INN 8.1.3-2]. Like the geologic and hydrologic systems, the geochemical system performance confirmation program demonstrates that there are no adverse effects on overall performance from the waste emplacement, monitors/analyzes the changes from baseline conditions, and confirms the design assumptions and parameters.

Note: The site characterization information presented in Chapter 3, Chapter 6, [INN 8.1.3-1], and INN 8.1.3-2 will be used to complete this Section.]

8.1.4 Climatological and Meteorological Systems

[The Performance Confirmation Program for the evaluation of the climatological and meteorological systems is described below and is summarized in Table 8.1.4-1 [INN 8.1-1, INN 8.1.4-1, and INN 8.1.4-2]. Like the systems described above, the confirmation program for the climatological and meteorological systems monitors and analyzes changes from the baseline conditions, and confirms assumptions and parameters.

Note: The confirmation of these systems will rely heavily on site characterization data and interpretations, and on the performance assessment results that are described in Chapters 3 and 6.]

REFERENCES

10 CFR 60, Disposal of High-Level Radioactive Wastes in Geologic Repositories

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Table 8.1.1-1 Performance Confirmation Tests for the Geologic System

Confirmation Test (Location)	Purpose	Summary of Results and Expected Trends (changes)
Seismic network monitoring (Regional)	Regional Monitoring	
Geodetic leveling (Regional)	Regional Monitoring	
Drift stability monitoring (ESF)		
Heated room experiment (ESF)		
In situ testing of seal components (ESF)		

Note: This table will be completed using INNs 8.1-1, 8.1.1-1, and 8.1.1-2, and Chapters 3 and 6.

Date: 03/31/95

Table 8.1.2-1 Performance Confirmation Tests for the Hydrologic System

Confirmation Test (Location)	Purpose	Summary Results and Remaining Work
Surface water runoff monitoring (Site)		
Unsaturated zone monitoring (Site)		
Natural infiltration monitoring (Site)		
Intact fracture test (Laboratory)		
Percolation test (ESF)		
Bulk permeability test (ESF)		
Near-field thermally perturbed hydrologic properties (ESF)		
Site potentiometric level monitoring (Region/Site)		

Note: This table will be completed using INNs 8.1-1, 8.1.2-1, and 8.1.2-2, and Chapters 3 and 6.

Date: 03/31/95

Table 8.1.3-1 Performance Confirmation Tests for the Geochemical System

Confirmation Test (Location)	Purpose	Summary of Results and Remaining Work
Rock/water interaction tests (ESF)	To determine mineralogical changes	

Note: This table will be completed using INNs 8.1-1, 8.1.3-1, and 8.1.3-2, and Chapters 3 and 6.

Table 8.1.4-1 Performance Confirmation Tests for the Climatological and Meteorological Systems

Confirmation Test (Location)	Purpose	Summary of Results and Remaining Work
Meteorological monitoring (Site)		

Note: This table will be completed using INNs 8.1-1, 8.1.4-1, and 8.1.4-2, and Chapters 3 and 6.

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Information Need Number:	INN 8.1-1
Section Number and Title:	8.1 PERFORMANCE CONFIRMATION FOR THE NATURAL SYSTEMS OF THE GEOLOGIC SETTING
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Tables 8.1.1-1, 8.1.2-1, 8.1.3-1, and 8.1.4-1
Explicit description of the needed information:	<p>Plan for the Performance Confirmation Program.</p> <p>Plan that describes the required testing during the baseline and confirmation phases of the Performance Confirmation Program. This plan should describe in detail the tests that will be conducted to confirm the natural system; the structures, systems, and components of the repository operations area; and the engineer barrier system. It should summarize how the data gained during the testing will be used to confirm repository behavior and to make the ultimate decision to apply for a license amendment for repository closure.</p>
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

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Deliverable providing information:	
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Information Need Number:	INN 8.1.1-1
Section Number and Title:	8.1 PERFORMANCE CONFIRMATION FOR THE NATURAL SYSTEMS OF THE GEOLOGIC SETTING
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.1.1-1
Explicit description of the needed information:	Expected changes in the geologic system. These changes will be developed based on the results of site characterization including the baseline phase if the Performance Confirmation Program is conducted in the ESF. In addition, the results of performance assessments will be used to analyze projected changes in the geologic system.
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	Total System Performance Assessment for Performance Confirmation Program
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
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MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 8.1.1-2
Section Number and Title:	8.1 PERFORMANCE CONFIRMATION FOR THE NATURAL SYSTEMS OF THE GEOLOGIC SETTING
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.1.1-1
Explicit description of the needed information:	Results and analyses of the Baseline Phase of confirmation testing for the geologic system.
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	Site Suitability Report Total Performance Assessment reports Performance Confirmation Program Plan
Does the supporting data need to be QA?	Yes

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
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Information Need Number:	INN 8.1.2-1
Section Number and Title:	8.1 PERFORMANCE CONFIRMATION FOR THE NATURAL SYSTEMS OF THE GEOLOGIC SETTING
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.1.2-1
Explicit description of the needed information:	Expected changes in the hydrologic system. These changes will be based on site characterization, baseline testing results, and expected changes from the Performance Confirmation Program Plan.
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	Site Suitability Report Total System Performance Assessment reports Performance Confirmation Program Plan
Does the supporting data need to be QA?	Yes

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Section Number and Title:	8.1 PERFORMANCE CONFIRMATION FOR THE NATURAL SYSTEMS OF THE GEOLOGIC SETTING
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.1.2-1
Explicit description of the needed information:	Results and analyses of the Baseline Phase of confirmation testing for the hydrologic system.
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	Site Suitability Report Total System Performance Assessment reports Performance Confirmation Program Plan
Does the supporting data need to be QA?	Yes

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Section Number and Title:	8.1 PERFORMANCE CONFIRMATION FOR THE NATURAL SYSTEMS OF THE GEOLOGIC SETTING
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.1.3-1
Explicit description of the needed information:	Expected changes in the geochemical system. These changes will be based on site characterization, baseline testing results, and expected changes from the Performance Confirmation Program Plan.
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	Site Suitability Report Total System Performance Assessment reports Performance Confirmation Program Plan
Does the supporting data need to be QA?	Yes

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Section Number and Title:	8.1 PERFORMANCE CONFIRMATION FOR THE NATURAL SYSTEMS OF THE GEOLOGIC SETTING
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.1.3-1
Explicit description of the needed information:	Results and analyses of the Baseline Phase of confirmation testing for the geochemical system.
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	Site Suitability Report Total System Performance Assessment reports Performance Confirmation Program Plan
Does the supporting data need to be QA?	Yes

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Section Number and Title:	8.1 PERFORMANCE CONFIRMATION FOR THE NATURAL SYSTEMS OF THE GEOLOGIC SETTING
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.1.4-1
Explicit description of the needed information:	Expected changes in the climatological and meteorological systems. These changes will be based on site characterization, baseline testing results, and expected changes from the Performance Confirmation Program Plan.
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	Site Suitability Report Total System Performance Assessment reports Performance Confirmation Program Plan
Does the supporting data need to be QA?	Yes

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Information Need Number:	INN 8.1.4-2
Section Number and Title:	8.1 PERFORMANCE CONFIRMATION FOR THE NATURAL SYSTEMS OF THE GEOLOGIC SETTING
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.1.4-1
Explicit description of the needed information:	Results and analyses of the Baseline Phase of confirmation testing for the climatological and meteorological systems
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	Site Suitability Report Total System Performance Assessment reports Performance Confirmation Program Plan
Does the supporting data need to be QA?	Yes

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Section 8.2 Performance Confirmation for the Structures, Systems, and Components of the Geologic Repository Operations Area

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8.2 PERFORMANCE CONFIRMATION FOR THE STRUCTURES, SYSTEMS, AND COMPONENTS OF THE GEOLOGIC REPOSITORY OPERATIONS AREA

Performance confirmation tests to evaluate the structures, systems, and components of the geologic repository operations area (GROA) are required to confirm the findings presented in Chapter 6 of this LA. These performance confirmation activities are designed to yield the data and information necessary to satisfy 10 CFR 60.140, 141, and 142 for structures, systems and components that have been classified as important to waste isolation. The structures include shafts and ramps, the systems include the underground facility, and the components include drains and seals. Surface facilities are included where confirmation activities affect their design or operation.

8.2.1 Surface Facilities

There are no specific requirements for performance confirmation of the surface facilities. [Note: A description of how performance confirmation testing for the repository affects the design or operation of the surface facilities will be included here if any effects are found to be present.]

8.2.2 Shafts and Ramps

[Performance confirmation testing for shafts and ramps (Table 8.2.2-1) consists of an iterative process of planning and implementation. Planning is documented in the Performance Confirmation Program Plan [INN 8.2.2-1]. The results of implementation of the baseline phase of performance confirmation is reported in _____ [INN 8.2.2-2], and the results anticipated for the confirmation testing of shafts and ramps during the performance confirmation phase are presented in _____ [INN 8.2.2-3].]

[Planning and implementation of performance confirmation for shafts and ramps consist of the following activities:

- a. Collection of baseline data for the penetrated strata and the shaft and ramp engineered components;
- b. Initial performance assessments for the shaft or ramp;
- c. Revising performance confirmation plans based on data collected during construction;
- d. Revising performance confirmation plans based on data collected during operation;

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- e. Full-scale testing to evaluate the effectiveness of seals, grouts, plugs and backfill, and to evaluate the effectiveness of drainage; and
- f. Performance assessments supporting permanent closure.]

[The computer codes used for determination of expected results from testing of components of shafts and ramps are discussed in _____ [INN 8.2.2-3] and Chapters 4 and 6. The GROA is described in Chapter 4, and the structures, systems, and components important to safety and waste isolation are also included in that discussion. The Performance Confirmation Plan [INN 8.2.2-2] includes a discussion of each test that will be conducted (location, monitoring, if radioactive materials will be involved, and parameters to be measured), the duration of the test, and a summary of the expected results. The expected results are described in detail in _____ [INN 8.2.2-3] along with a discussion of the models used in the analysis. It is expected that these codes and models will be the same as those discussed in Chapter 6. The results of confirmation testing that has been completed, along with a comparison of actual and expected results are presented in _____ [INN 8.2.2-2].]

8.2.3 Underground Facility

[The performance confirmation testing for the underground facility (Table 8.2.3-1) consists of an iterative process of planning and implementation. Planning is documented in _____ [INN 8.2.2-1]. The results of implementation of the baseline phase of performance confirmation is reported in _____ [INN 8.2.2-2], and the results anticipated for the confirmation phase of performance confirmation for the underground facility are presented in _____ [INN 8.2.2-3].]

[Planning and implementation of performance confirmation for the underground facility consist of the following activities:

- a. Collection of baseline data for the host rock and the engineered components;
- b. Initial performance assessments for the underground facility;
- c. Revising performance confirmation plans based on data collected during construction;
- d. Revising performance confirmation plans based on data collected during operation;
- e. Continued performance confirmation to assess thermal and thermomechanical response of the natural and engineered components to construction and emplacement of waste;
- f. Full-scale testing to evaluate the effectiveness of seals, grouts, plugs and backfill, and to evaluate the effectiveness of drainage; and

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g. Performance assessments supporting permanent closure.]

[The computer codes used for determination of expected results from testing of components of the underground facility are discussed in _____ [INN 8.2.2-3] and Chapters 4 and 6. The GROA is described in Chapter 4; the discussion includes the structures, systems, and components important to safety and waste isolation. The Performance Confirmation Plan [INN 8.2.2-2] includes a discussion of each test that will be conducted (location, monitoring, if radioactive materials will be involved, and parameters to be measured), the duration of the test, and a summary of the expected results. The expected results are described in detail in _____ [INN 8.2.2-3] along with a discussion of the models used in the analysis. It is expected that these codes and models will be the same as those discussed in Chapter 6. The results of confirmation testing that has been completed, along with a comparison of actual and expected results are presented in _____ [INN 8.2.2-2].]

REFERENCES

- 10 CFR 60, Disposal of High-Level Radioactive Wastes in Geologic Repositories;
Subpart F, Performance Confirmation Program; Section 140, General requirements;
Section 141, Confirmation of geotechnical and design parameters; and Section 142,
Design testing

Date: 03/31/95

Table 8.2.2-1 Performance Confirmation Tests for Shafts and Ramps

Test Title and Description	Results (actual or anticipated) and Duration

Note: This table will be completed using INNs 8.2.2-1, 8.2.2-2, and 8.2.2-3, and Chapter 4.

Table 8.2.3-1 Performance Confirmation Tests for the Underground Facility

Test Title and Description	Results (actual or anticipated) and Duration

Note: This table will be completed using INNs 8.2.2-1, 8.2.2-2, and 8.2.2-3, and Chapter 4.

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Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Tables 8.2.2-1 and 8.2.3-1
Explicit description of the need information:	<p>Plan for the Performance Confirmation Program.</p> <p>Plan that describes the required testing during the baseline and confirmation phases of the Performance Confirmation Program. This plan should describe in detail the tests that will be conducted to confirm the natural system; the structures, systems, and components of the repository operations area; and the engineer barrier system. Section on repository operations are should include discussion of shafts, ramps, and the underground facilities. The plan should summarize how the data gained during the testing will be used to confirm repository behavior and to make the ultimate decision to apply for a license amendment for repository closure.</p>
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	

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Information Need Number:	INN 8.2.2-2
Section Number and Title:	8.2 PERFORMANCE CONFIRMATION FOR THE STRUCTURES, SYSTEMS, AND COMPONENTS OF THE GEOLOGIC REPOSITORY OPERATIONS AREA
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Tables 8.2.2-1 and 8.2.3-1
Explicit description of the need information:	Results of testing during the baseline phase of performance confirmation for shafts, ramps, and the underground facilities.
Information will be used to support:	
The Information is needed by/for (date or event):	2000
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	Yes

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Section Number and Title:	8.2 PERFORMANCE CONFIRMATION FOR THE STRUCTURES, SYSTEMS, AND COMPONENTS OF THE GEOLOGIC REPOSITORY OPERATIONS AREA
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Tables 8.2.2-1 and 8.2.3-1
Explicit description of the need information:	Anticipated results of testing during performance confirmation for shafts, ramps, and the underground facilities (performance assessment analyses).
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	Yes

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Section 8.3 Performance Confirmation for the Engineered Barrier System

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- 8.3.1.4-1 Summary of the Laboratory Confirmation Tests for the Waste Package
 [INN 8.3.1.4-1]
- 8.3.2.1-1 Summary of Analyses of the Effects of Waste Package Failure [INN 8.3.2-1]
- 8.3.2.4-1 Summary of Performance Allocated to Components of the EBS
 [INN 8.3.2.4-1]

LIST OF FIGURES

- 8.3-1 Components of the EBS [INN 8.3-1]
- 8.3-2 Components of the Waste Package [INN 8.3-2]
- 8.3.1-1 Waste Package Monitoring Locations [INN 8.3.1-1]
- 8.3.1.2-1 Layout of Representative Waste Packages to be Monitored [INN 8.3.1.2-1]
- 8.3.1.3-1 Monitoring of Locations Outside the Waste Package [INN 8.3.1.3-1]

LIST OF INFORMATION NEEDS

- 8.3-1 Drawing or schematic of the components of the EBS.
- 8.3-2 Drawing or schematic of the components of the waste package.
- 8.3-3 Plan for the Performance Confirmation Program.
- 8.3-4 Analyses of expected results from EBS confirmation tests.
- 8.3-5 Analyses of expected results from EBS baseline confirmation tests compared with expected results.
- 8.3.1-1 Report on monitoring the components of the waste package during confirmation testing.
- 8.3.1.2-1 Report on selection of representative waste packages for monitoring during confirmation testing.
- 8.3.1.2-2 Report on results of degradation of waste packages during confirmation testing (includes a comparison of expected and actual results).
- 8.3.1.3-1 Report on monitoring outside of the waste packages (in the near field) during confirmation testing.
- 8.3.1.4-1 Plan for laboratory testing during the performance confirmation period.
- 8.3.1.6-1 Plan for compliance with the performance confirmation requirements of 10 CFR 60.
- 8.3.2-1 Analyses of the effects of waste package failure modes and scenarios of failure modes on radionuclide release from the repository and to the accessible environment.
- 8.3.2.4-1 Report on performance allocation to component of the EBS and justification of these allocations through supporting analyses.

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8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM

The Engineered Barrier System (EBS) is described in Chapter 5. Performance confirmation activities for the EBS are required to confirm the expected behavior of the EBS thereby increasing confidence in the EBS design that is presented in Chapter 5. [The components of the EBS are shown in Figure 8.3-1 [INN 8.3-1] and the components of the waste package are shown in Figure 8.3-2 [INN 8.3-2.] This expected behavior serves as input to the total system analyses that are discussed in Chapter 6; thus performance confirmation testing of the EBS is required to confirm those analyses. The performance confirmation activities that are required for the EBS [are described in the Performance Confirmation Plan for the EBS [INN 8.3-3] and are summarized in Table 8.3-1. The Performance Confirmation Plan for the EBS [INN 8.3-3] contains a discussion of the laboratory and in situ confirmation tests that are required prior to closure of the repository.]

[The Performance Confirmation Plan [INN 8.3-3] includes those tests that will be conducted in both phases of confirmation: the baseline phase which ends with submission of the LA and the confirmation phase consisting of an interim period which ends with the granting of the construction authorization, a construction period which ends with granting of the license to accept waste, and an operational period which ends with the amendment to the license for permanent closure. The Plan [INN 8.3-3] includes tests under expected repository conditions as well as those for anticipated (expected) processes and events, and identifies unanticipated processes and events that could lead to barrier failure. The effects of unanticipated processes are analyzed primarily through performance assessments which have been discussed in Chapter 5 (Engineered Barrier Systems) and Chapter 6 (Overall System Performance Assessment). Where tests can be devised to aid in confirming these analyses they will be discussed in the Performance Confirmation Plan. The analyses to determine the expected results of each of the confirmation tests [are presented in _____ [INN 8.3-4] and are summarized in the Performance Confirmation Plan [INN 8.3-3]. The complete analyses of expected test results contained in _____ [INN 8.3-4] include the total system performance assessments necessary to predict the effects under anticipated and unanticipated processes and events.]

[The results of confirmation testing that has been completed prior to submission of the LA are presented in _____ [INN 8.3-5]. This document contains the results of confirmation testing and a comparison of the actual with the predicted results [INN 8.3-5]. These comparisons [INN 8.3-5] are made for both the laboratory and the in situ tests.]

8.3.1 Waste Package Monitoring

[The approach to monitoring conditions in the vicinity of the waste packages is defined in _____, and a schematic of this approach is presented in Figure 8.3.1-1 [INN 8.3.1-1]. A discussion of waste package components is contained in Section 5.1. The discussion of the approach to monitoring the waste packages and associated engineered barrier components provided in _____ [INN 8.3.1-1] includes: the description of monitoring devices; their

accuracy, calibration, and reliability; and their placement within the EBS. This document [INN 8.3.1-1] also contains a discussion of the environment that these devices will be subjected to, their expected life in that environment, and means of replacement during the specific tests.]

8.3.1.1 Waste Form

[The performance confirmation of other EBS components that could effect the waste form will be discussed. However, no effects on the waste form are currently expected.]

8.3.1.2 In Situ Waste Package Monitoring

[The monitoring of waste packages (during repository operation) within each expected environment within the repository will be discussed. The layout of these in situ tests within representative panels of the repository is presented in _____ [INN 8.3.1.2-1] and is presented schematically in Figure 8.3.1.2-1. The placement of individual monitoring devices is shown in Figure 8.3.1-1 [INN 8.3.1-1]. These devices will monitor the intensity of gamma radiation, temperature, pressure, ion-specific geochemistry, moisture conditions, and parameters which relate to gas and liquid movement. The results of monitoring are compared to predicted temperatures and fluid flow rates. The effects of the radiation and the geochemical environment on barrier system components is determined by periodic retrieval and laboratory analysis of system components. This retrieval aids in confirmation of the waste retrieval option, allows for inspection of the wall rock in the vicinity of the package, provides access for sampling of the geochemical environment near the removed waste package, and could provide package components for degradation testing. The results of the testing of package components are compared with predicted results [INN 8.3.1.2-2].]

[The validation of the methods of extrapolation proposed to evaluate post closure performance is presented in _____ [INN 8.3.1.2-2] and the verification of computer codes and validation of models which were used in this evaluation are described in Chapters 5 and 6.]

8.3.1.3 External Waste Package Monitoring Environment

[The description of methods for monitoring the external environment of the waste packages (the rock in the vicinity of the repository, the rock in the vicinity of the waste packages, and the backfill) is presented in _____ [INN 8.3.1.3-1], and a schematic of the monitoring approach is presented in Figure 8.3.1.3-1. This monitoring (which will be done during repository operation) will include the flow of gas and moisture, specific ions, temperature, rock stress and strain, and radiation. The results are compared with the expected near field behavior which is presented in _____ [INN 8.3-4].]

8.3.1.4 Laboratory Waste Package Monitoring

[The description of the waste package laboratory testing program for demonstration of compliance with 10 CFR 60.143(c) is presented in the laboratory testing plan _____]

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[INN 8.3.1.4-1] and is summarized in Table 8.3.1.4-1. The laboratory experiments (some of which will be completed at the time of submission of the LA) will duplicate the underground environment at Yucca Mountain as closely as possible. However, tests will be conducted over a range of temperatures that are higher than expected in the repository in order to accelerate degradation of package components. The tests will largely be conducted in hot cells, some of which could be located within the underground facility, in order to more closely simulate the repository environment. During the tests the environmental conditions of pressure, temperature, specific ions in fluids, and gas generation will be monitored. Monitoring will be conducted both inside and outside the waste package (in the rock and the backfill).]

8.3.1.5 Duration of Post-Emplacement Waste Package Monitoring

[Monitoring of the waste packages will begin immediately after emplacement and will continue until the end of the retrieval period in accordance with 10 CFR 60.143(d). During this time some experiments will be completed, new tests will be initiated, and some tests initiated prior to emplacement will be continued. The last data from the testing will be collected and analyzed prior to permanent closure. These analyses, along with prior results, will be presented to the Nuclear Regulatory Commission to obtain the license amendment for permanent closure. Closure of the repository could occur as early as 50 years after emplacement of the first waste package or at a later time (100 years after emplacement) as is currently envisioned in the Program Approach (DOE, 1994).]

8.3.1.6 Demonstration of Compliance

[The Performance Confirmation Program for the EBS has the following objectives in order to demonstrate compliance with 10 CFR 60.143:

- To demonstrate that the pre-emplacement waste package environment was accurately characterized (during site characterization and the baseline phase of performance confirmation);
- To evaluate the waste package components in a repository environment, both in the laboratory and in situ;
- To evaluate environmental conditions near and around waste packages under repository conditions;
- To confirm repository and EBS design parameters; and
- To develop a data set that can be used to bound the degradation of the waste packages and to predict their failure [INN 8.3-3].]

[The Performance Confirmation Plan [INN 8.3-3] includes a brief discussion of parameters to be monitored, location of monitoring devices, measurement sampling frequency, accuracy of

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measurements, quality control, instrument calibration, and reliability and maintenance of the monitoring systems. More detailed discussions of these subjects can be found in _____ [INN 8.3.1-1] and in _____ [INN 8.3.1.3-1]. The discussions in [INN 8.3.1-1] and [INN 8.3.1.3-1] will be used to complete this section. A Waste Package Compliance Plan [INN 8.3.1.6-1] will also be developed to guide the activities and provide the approach to waste package compliance.]

8.3.2 Engineered Barrier and Waste Package Performance Objectives

[The EBS and waste package performance objectives have been presented in detail in previous sections of this LA [INN 8.3-3, INN 8.3.1-1, and INN 8.3.1.3-1]. This section presents a detailed discussion of analyses conducted to determine; the effects of waste package failure [INN 8.3.2-1], the expected environment for confirmation testing [INN 8.3-4], confirmatory test results [INN 8.3-4], and performance allocation to the components of the EBS [INN 8.3.2.4-1].]

8.3.2.1 Failure Mode and Effects Analysis

[A discussion of repository scenario screening for anticipated and unanticipated processes and events that could lead to EBS component failure is presented in Chapter 6 along with analyses of the effects of these processes and events on the overall repository system performance. Analyses of the performance of the EBS is presented in Section 5.2. This discussion serves as a basis for analysis of the effects of waste package failure contained in _____ [INN 8.3.2-1] which are summarized in Table 8.3.2.1-1. The discussion contained in [INN 8.3.2-1] will be used to complete this Section.]

8.3.2.2 Environmental Conditions for Confirmatory Tests and Analyses

[The analyses of expected test results, near field waste package conditions, and repository environmental conditions are presented in _____ [INN 8.3-4]. These expected conditions were used to develop the expected confirmation test results that are also presented in _____ [INN 8.3-4].]

8.3.2.3 Confirmatory Tests and Analysis

[The analyses of expected confirmation test results for the waste package along with the criteria for determining whether confirmation has been achieved are presented in _____ [INN 8.3-4].]

8.3.2.4 EBS Performance Allocation

[The design performance allocated to different parts of the EBS is described in Subsection 5.2.2 and is summarized here in Table 8.3.2.4-1 [INN 8.3.2.4-1]. The results presented in Subsection 8.3.2 will be used to complete this Subsection.]

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8.3.2.5 Results of EBS Performance Confirmation

[The results of the baseline confirmation testing have been compared to the analyses of expected results in _____ [INN 8.3-5].]

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REFERENCES

U. S. Department of Energy (DOE), 1994. "Yucca Mountain Site Characterization Project Five Year Plan, Fiscal Years 1996-2000", October 12, 1994, Predecisional Draft

M&O, 1994, Retrieval Period Systems Study, TRW B00000000-01717-5705-00017, REV 00

M&O, 1994a, Waste Acceptance System Requirements Document (WSARD), TRW E00000000-00811-1708-00001, Rev 1

10 CFR 60, Disposal of High-Level Radioactive Wastes in Geologic Repositories

DOE/RW-0199, *Site Characterization Plan*, Yucca Mountain Site, Nevada Research and Development Area, Nevada. Office of Civilian Radioactive Waste Management

EPA Regulations

Waste Form Compliance Plans

Waste Qualification Tests

Waste Package Test Reports

Waste Form Test Reports

Performance Assessments

Table 8.3-1 Performance Confirmation Tests for the EBS

Confirmation Test (Location)	Purpose and Description	Summary of Results Obtained or Expected

Note: This table will be completed using INNs 8.3-3, 8.3-4, and 8.3-5.

Table 8.3.1.4-1 Summary of the Laboratory Confirmation Tests for the Waste Package

Confirmation Test (Location)	Purpose and Description	Summary of Results Obtained or Expected

Note: This table will be completed using INN 8.3.1.4-1.

Table 8.3.2.1-1 Summary of Analyses of the Effects of Waste Package Failure

Failure Mode or Scenario of Failure Modes	Failure Rate	Summary of Effects Anticipated at Repository Boundary and Accessible Environment

Note: This table will be completed using INN 8.3.2-1.

Table 8.3.2.4-1 Summary of Performance Allocated to Components of the EBS

EBS Component	Performance Allocation	Justification
Seals		

Note: This table will be completed using INN 8.3.2.4-1.

FIGURE CAPTIONS

- | | |
|------------------|--|
| Figure 8.3-1 | Components of the EBS [INN 8.3-1] |
| Figure 8.3-2 | Components of the Waste Package [INN 8.3-2] |
| Figure 8.3.1-1 | Waste Package Monitoring Locations [INN 8.3.1-1] |
| Figure 8.3.1.2-1 | Layout of Representative Waste Packages to be Monitored
[INN 8.3.1.2-1] |
| Figure 8.3.1.3-1 | Monitoring of Locations Outside the Waste Package [INN 8.3.1.3-1] |

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 8.3-1
Section Number and Title:	8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Figure 8.3-1
Explicit description of the needed information:	Drawing or schematic of the components of the EBS.
Information will be used to support:	
The Information is needed by/for (date or event):	1996
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 8.3-2
Section Number and Title:	8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Figure 8.3-2
Explicit description of the needed information:	Drawing or schematic of the components of the waste package.
Information will be used to support:	
The Information is needed by/for (date or event):	1996
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 8.3-3
Section Number and Title:	8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.3-1
Explicit description of the needed information:	<p>Plan for the Performance Confirmation Program.</p> <p>Plan that describes the required testing during the baseline and confirmation phases of the Performance Confirmation Program. This plan should describe in detail the tests that will be conducted to confirm the natural system; the structures, systems, and components of the repository operations area; and the engineer barrier system. It should summarize how the data gained during the testing will be used to confirm repository behavior and to make the ultimate decision to apply for a license amendment for repository closure.</p>
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	

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INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 8.3-4
Section Number and Title:	8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.3-1
Explicit description of the needed information:	Analyses of expected results from EBS confirmation tests.
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	Yes

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 8.3-5
Section Number and Title:	8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.3-1
Explicit description of the needed information:	Analyses of expected results from EBS baseline confirmation tests compared with expected results.
Information will be used to support:	
The Information is needed by/for (date or event):	2000
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	Yes

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 8.3.1-1
Section Number and Title:	8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Figure 8.3.1-1
Explicit description of the needed information:	Report on monitoring the components of the waste package during confirmation testing.
Information will be used to support:	.
The Information is needed by/for (date or event):	2000
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	Yes

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 8.3.1.2-1
Section Number and Title:	8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Figure 8.3.1.2-1
Explicit description of the needed information:	Report on selection of representative waste packages for monitoring during confirmation testing.
Information will be used to support:	
The Information is needed by/for (date or event):	2000
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	Yes

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 8.3.1.2-2
Section Number and Title:	8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the needed information:	Report on results of degradation of waste packages during confirmation testing (includes a comparison of expected and actual results).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	Yes

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 8.3.1.3-1
Section Number and Title:	8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Figure 8.3.1.3-1
Explicit description of the needed information:	Report on monitoring outside of the waste packages (in the near field) during confirmation testing.
Information will be used to support:	
The Information is needed by/for (date or event):	2000
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	Yes

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 8.3.1.4-1
Section Number and Title:	8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.3.1.4-1
Explicit description of the needed information:	<p>Plan for laboratory testing during the performance confirmation period.</p> <p>This plan should include discussion leading to the decision for or against testing in hot cells either above ground or in the repository. It should describe the testing frequency, methods of testing (i.e., destructive or nondestructive), and results expected.</p>
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	Yes

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 8.3.1.6-1
Section Number and Title:	8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the needed information:	Plan for compliance with the performance confirmation requirements of 10 CFR 60.
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 8.3.2-1
Section Number and Title:	8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.3.2.1-1
Explicit description of the needed information:	Analyses of the effects of waste package failure modes and scenarios of failure modes on radionuclide release from the repository and to the accessible environment.
Information will be used to support:	
The Information is needed by/for (date or event):	1998
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 8.3.2.4-1
Section Number and Title:	8.3 PERFORMANCE CONFIRMATION FOR THE ENGINEERED BARRIER SYSTEM
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.3.2.4-1
Explicit description of the needed information:	Report on performance allocation to component of the EBS and justification of these allocations through supporting analyses.
Information will be used to support:	
The Information is needed by/for (date or event):	2000
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	Yes

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

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Section 8.4 Radiation Protection

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- 8.4-1 Document describing the plans to monitor and control internal and external radiological exposure to workers and to members of the public from the testing described in the Performance Confirmation Plan.

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8.4 RADIATION PROTECTION

[The description of the plans to monitor and control internal and external radiological exposure to workers and to members of the public is presented in _____ [INN 8.4-1]. This Section lays out the radiation protection design features of the underground facility and discusses how these features are intended to meet the standards of 10 CFR 20, *Standards for Protection Against Radiation*, and 40 CFR 191, *Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Wastes*, Subpart A. This section includes (where performance confirmation activities differ from the operations included in Subsection 4.4.1):

- a. A discussion of the layout of radiological areas and facilities;
- b. As low as reasonably achievable design considerations;
- c. Characterization of shielding;
- d. Radiological monitoring instrumentation; and
- e. Interface of structures, systems, and components that are important to safety.

The Section also includes an assessment of compliance with 10 CFR 20 where confirmation testing activities differ from the operations described in Chapter 4 (Section 4.2 and Subsection 4.5.1). The assessment follows the same format as presented in Section 4.2 for restricted areas and Subsection 4.5.1 for unrestricted areas.]

REFERENCES

10 CFR 20, Standards for Protection Against Radiation

40 CFR 191, Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Wastes, Subpart A

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 8.4-1
Section Number and Title:	8.4 RADIATION PROTECTION
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the needed information:	Document describing the plans to monitor and control internal and external radiological exposure to workers and to members of the public from the testing described in the Performance Confirmation Plan.
Information will be used to support:	
The Information is needed by/for (date or event):	1999
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	Yes

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

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Section 8.5 Analysis of Changes from Performance Confirmation Baseline

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LIST OF INFORMATION NEEDS

- 8.5-1 Document containing a detailed approach to dealing with parameter changes found during confirmation that affect baseline parameters used in analysis and design.

Date: 03/31/95

**8.5 ANALYSIS OF CHANGES FROM PERFORMANCE CONFIRMATION
BASELINE**

[A description of the monitoring system used to determine changes in parameters that were used in repository design, design of the EBS, and in performance analyses of the tests and overall system is presented in _____ [INN 8.5-1]. A summary description of the parameters to be monitored and the methods of monitoring is presented in Table 8.5-1 [INN 8.5-1]. The analyses associated with any change in baseline parameters, the methods of feedback of data and analyses to appropriate decision makers within the U.S. Department of Energy and to the Nuclear Regulatory Commission, and the approach to implementation of appropriate action are also described in _____ [INN 8.5-1]. A schematic of the flow of information and analyses (based on parameter changes) to the decision makers for potential implementation of changes is presented in Figure 8.5-1 [INN 8.5-1]. The approach used for reaching decisions, and the criteria for determination of whether a change is necessary (e.g., whether the deviation between expected and observed behavior is large enough to effect health and safety) are also described in _____ [INN 8.5-1].]

SKELETON TEXT

Date: 03/31/95

YMP/94-05, Rev. 0

REFERENCES

Table 8.5-1 Methods of Monitoring Baseline Parameters During Performance Confirmation.

Baseline Parameter	Method of Monitoring
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Note: This table will be completed using INN 8.5-1.

Figure 8.5-1 Flow of Data, Analyses, and Information from Tests to Implementation of Changes [INN 8.5-1]

F-8.5-1

The above Annotated Outline text is guidance that may be used for the future development of an MGDS facility License Application.

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 8.5-1
Section Number and Title:	8.5 ANALYSIS OF CHANGE FROM PERFORMANCE CONFIRMATION BASELINE
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.5-1 and Figure 8.5-1
Explicit description of the needed information:	Document containing a detailed approach to dealing with parameter changes found during confirmation that affect baseline parameters used in analysis and design.
Information will be used to support:	
The Information is needed by/for (date or event):	1999
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

MGDS License Application Annotated Outline

Section 8.6 Unresolved Safety Questions

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LIST OF INFORMATION NEEDS

- 8.6-1 Discussion of remaining unresolved safety questions expected at the time of submission of the Safety Analysis Report should be presented in a system safety hazard analysis report.

Date: 03/31/95

8.6 UNRESOLVED SAFETY QUESTIONS

[Safety questions that remain unresolved at the time of submission of this Safety Analysis Report are presented below, and are described in more detail in the system safety hazard analysis report _____ [INN 8.6-1]. The discussion includes the level of severity of the safety questions and a description of its potential effect. These questions are summarized in Table 8.6-1 along with the expected dates of their resolution [INN 8.6-1].]

REFERENCES

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Table 8.6-1 Summary of Unresolved Safety Questions

Safety Question	Probability of Occurrence	System Effected and Location	Description and Level of Severity	Expected Date of Resolution
1.			Potential risk to ---	6/30/02
2.				
3.				
4.				

Note: This table will be completed using the system safety hazard analysis report [INN 8.6-1].

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 8.6-1
Section Number and Title:	8.6 UNRESOLVED SAFETY QUESTIONS
Lead Author/Support Author and Phone:	Jim Duguid (703) 204-8851
Primary LA AO Table or Figure INN supports (if applicable):	Table 8.6-1
Explicit description of the needed information:	Discussion of remaining unresolved safety questions expected at the time of submission of the Safety Analysis Report should be presented in a system safety hazard analysis report. Description of the question, its expected severity, and the expected date of resolution.
Information will be used to support:	
The Information is needed by/for (date or event):	January 2000
Most likely source of the Information:	TBD
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

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Chapter 9.0 Land Ownership and Control

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9.0 LAND OWNERSHIP AND CONTROL

[This chapter describes the interests in real property that have been obtained by the U.S. Department of Energy (DOE) to demonstrate compliance with the regulatory requirements of 10 CFR 60, *Disposal of High-Level Radioactive Wastes in Geologic Repositories*. The descriptions of the specific interests are detailed in Sections 9.1 and 9.2, and compliance with 10 CFR 60 is explicitly detailed in Section 9.3. In addition, this chapter discusses whether the DOE has sufficient and appropriate interests in real property to be in compliance with 10 CFR 60.]

The provisions of 10 CFR 60.121(a) require that "(1) Both the geologic repository operations area and the controlled area shall be located in and on lands that are either acquired lands under the jurisdiction and control of DOE, or lands permanently withdrawn and reserved for its use." These provisions further require, under (2) that "These lands shall be held free and clear of all encumbrances, if significant, such as: (i) Rights arising under the general mining laws; (ii) easements for right-of-way; and (iii) all other rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise."

10 CFR 60.121(b) requires that "Appropriate controls shall be established outside of the controlled area. DOE shall exercise any jurisdiction and control over surface and subsurface estates necessary to prevent adverse human actions that could significantly reduce the geologic repository's ability to achieve isolation."

10 CFR 60.121(c) requires that (1) "DOE shall also have obtained such water rights as may be needed to accomplish the purpose of the geologic repository operations area." It is also specified that "(2) Water rights are included in the additional controls to be established under paragraph (b) of this section."

The parameters of the controlled area are defined in 40 CFR 191, *Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes*, and are based on information pertaining to the subsurface.

[Utilizing the outline of the proposed repository site, the information gathering process of the land ownership program will occur in three phases. The first phase defines the boundaries of the parcel for which the DOE must obtain control and seek withdrawal. Inherent in this phase is applying the information gained during site characterization that influenced the boundaries at the controlled area and accessible environment. The second phase ascertains the status of any pre-existing outside rights with respect to the land at the site. Investigations to date have identified no such rights (e.g., mineral, grazing, or water rights) at or in the vicinity of Yucca Mountain. The third phase involves the actual process by which information was obtained for purposes of supporting a withdrawal application as set forth in the Federal Land Management Policy Act and implementing U.S. Department of the Interior's Bureau of Land Management (BLM) regulations.]

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As established in the environmental assessment for the Yucca Mountain site (DOE, 1986), the land area of interest to the DOE for the Geologic Repository Operations Area (GROA) and controlled area is entirely on federal lands controlled by three federal agencies. These lands include the Nellis Air Force Range controlled by the Department of Defense, the Nevada Test Site controlled by the DOE, and public lands controlled by the BLM. The Military Lands Withdrawal Act of 1986 (Public Law 99-606) withdrew the 2.9 million acre Nellis Air Force Range for defense-related use by the U. S. Air Force. Management of these lands remains the responsibility of the BLM.

The ownership and control status of the land area of interest is important to the DOE for a number of reasons. These include the land management plans and agreements, and the public domain status of the BLM controlled lands. The DOE will monitor not only actions taken by the BLM or the U.S. Air Force with regard to the land areas of interest, but also the current or proposed laws and regulations that may impact land ownership and control, or the rights to access such lands.

Pursuant to 10 CFR 60.121, it is necessary for the DOE to withdraw the land that would comprise the repository operations area and controlled area and reserve this land for its use. Such a withdrawal action, under current law, must be made pursuant to applicable implementing regulations. To initiate a withdrawal action, the Federal Land Management Policy Act and implementing regulations define the data and information required to be provided at the time of application to Congress to support the review of the application.

Much of the required data and information has been collected as part of the site characterization activities and other programmatic activities conducted by the DOE. The programmatic activities include the repository land withdrawal and control process and the environmental program effort for the Yucca Mountain site. To ensure proper acquisition and documentation of data and information relevant and necessary to support withdrawal action, site characterization activities were reviewed and withdrawal information and documentation requirements were met in parallel with the site characterization program.

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REFERENCES

Rautman, C.A., Whittet, B.C., and South, D.L., Definitions of Reference Boundaries for the Proposed Geologic Repository at Yucca Mountain, Nevada, SAND86-2157, 1987 (NNA.870811.0044)

10 CFR 2, Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders

10 CFR 60, Disposal of High-Level Radioactive Wastes in Geologic Repositories

YMP/CM-0011, Site Characterization Program Baseline (NNA.910625.0001)

DOE/RW-0199, Site Characterization Plan, Yucca Mountain Site, Nevada Research and Development Area, Nevada

Public Law 99-606, The Military Lands Withdrawal Act of 1986

ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
DOE	U.S. Department of Energy
GROA	Geologic Repository Operations Area

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Section 9.1 Plans for Restricting Controlled Area Access

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- 9.1.4.3-1 Pertinent qualitative information by water category regarding water needed within the GROA

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9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS

This section identifies the controlled area, the existing legal interests, legal interests to be obtained, and water rights. The Physical Security Plan, published separately as Section 1.5 of the License Application, provides information on the methods to be used for controlling access at the site.

9.1.1 Identification of Controlled Area

The controlled area, as specified in 40 CFR 191.12(g), is a surface location (and the underground area beneath that location) that encompasses no more than 100 square kilometers (38.6 square miles) and extends horizontally no more than 5 kilometers (3.1 miles) in any direction from the outer boundary of the original location of the emplaced radioactive wastes in a repository.

The planned area enclosed by a 5 km boundary from the proposed repository area is larger than 100 square kilometers because it was based on waste isolation considerations. [The location of the controlled area was chosen to provide maximum possible isolation of the waste in the event of subsurface releases from waste packages and to ensure maximum permanence of the "passive institutional controls" referred to in 40 CFR 191.12 (Rautman et al., 1987).]

According to Rautman et al., 1987, the water table slopes to the southeast, and the groundwater flow that may potentially carry released radioactivity toward the accessible environment is in a southerly to easterly direction. Therefore, the controlled area boundary to the southeast would be the maximum distance, i.e., 5 kilometers.

The northeastern and northwestern boundaries of the controlled area would be chosen to follow topographic high ground where permanent markers would be more stable, anchored in relatively flat bedrock areas, than if situated in alluvial fill, which typically occurs in topographically low areas. Loose rock debris on steep slopes and the potential for landslides from steep bedrock areas make these areas undesirable for the location of monuments. Also, markers on high ground should be more readily visible at a distance than markers in valley areas, thus accentuating the intended purpose of calling attention to the boundaries of the site.

[The resultant boundary, which encloses an area of about 88.93 square kilometers or 21975.4 acres, is illustrated in Figure 9.1.1-1] [INN 9.1.1-1]. The proposed boundary between the controlled area and the accessible environment will be permanently marked with monuments, based on the topography, saturated zone flow directions, and maximum extent of the controlled boundary area. Marking and documentation will be as specified in 10 CFR 60.51, 60.102, and 40 CFR 191.14.

The limits of the controlled area define the beginning of the accessible environment and become the benchmark location at which releases of radioactivity following permanent closure

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of the repository must meet limits established by the Environmental Protection Agency in 40 CFR 191.13.

[The controlled area boundary identifies the location from which the integrated releases of radionuclides for a period of 10,000 years after closure will be calculated in order to determine compliance with 40 CFR 191.13, and establishes a minimum region that must be protected from the conduct of incompatible activities for 100 years. The restricted area refers to the area controlled by the licensee for purposes of protecting individuals from exposure to radiation and radioactive materials during preclosure activities, as defined by 10 CFR 60.2, since this restricted area may include accidental releases, as well as shipping and handling exposures to radiation. The restricted area is chosen to be identical to the controlled area.]

9.1.1.1 Legal Description of Controlled Area

The controlled area is situated at the junction of lands under three jurisdictions: Nevada Test Site, Nellis Air Force Range, and BLM land, and is centered approximately at Township 12 South, Range 49 East, Mount Diablo Meridian, Nevada.

The controlled area boundary extends from approximately E550000 to E581600 on an east-west axis and from about N783500 to N740800 on a north-south axis (Nevada State Coordinate System). The controlled area is approximately _____ square miles or _____ acres. [INN 9.1.1-1]

9.1.1.2 Relevant Features Within and Outside the Controlled Area

The relevant features within and outside the controlled area consist of the natural systems of the geologic setting, the physical facilities of the GROA, and the engineered barrier systems. [These features will be discussed in Chapters 3, 4, and 5, respectively. Figure 9.1.1.2-1 [INN 9.1.1.2-1] shows the limits of the underground facility.]

9.1.1.3 Description of Limits of the Underground Facility and Maximum Horizontal Distance to Boundary of the Controlled Area

[The map location of the design repository, defined by the perimeter drift, will be shown in Figure 9.1.1-1.] The design area of the repository is _____ square kilometers (_____ acres). [INN 9.1.1-1]

9.1.2 Identification of Existing Legal Interests

The DOE has jurisdiction over the Nevada Test Site. Access permits were obtained from the BLM and the Nellis Air Force Range for site characterization activities in specified locations within candidate site areas under their jurisdiction. Repository activities other than those specifically defined as site characterization activities are not included with these permits.

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9.1.2.1 Existing Present Surface Interests of Record in Lands Within the Controlled Area

The existing present surface interests of record in lands within the controlled area are limited to the part of the controlled area within the Nevada Test Site (DOE jurisdiction).

9.1.2.1.1 Rights Arising Under the General Mining Laws

Specific rights under the general mining laws are as follows: [INN 9.1.2.1.1-1]

9.1.2.1.2 Easements for Right-of-Way

Specific easements for right-of-way are as follows: [INN 9.1.2.1.2-1]

9.1.2.1.3 All Other Rights Arising Under Lease, Rights of Entry, Deed, Patent, Mortgage, Appropriation, Prescription, or Otherwise

Other rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise are as follows: [INN 9.1.2.1.3-1]

9.1.2.2 Existing Future Surface Interests of Record in Lands Within the Controlled Area

Existing future surface interests of record in lands within the controlled area are found in the following subsections.

9.1.2.2.1 Rights Arising Under the General Mining Laws

Rights arising under the general mining laws are as follows: [INN 9.1.2.2.1-1]

9.1.2.2.2 Easements for Right-of-Way

Easements for right-of-way are as follows: [INN 9.1.2.2.2-1]

9.1.2.2.3 All Other Rights Arising Under Lease, Rights of Entry, Deed, Patent, Mortgage, Appropriation, Prescription, or Otherwise

All other rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise are as follows: [INN 9.1.2.2.3-1]

9.1.2.3 Existing Present Subsurface Interests of Record in Lands Within the Controlled Area

Existing present subsurface interests of record in lands within the controlled area are found in the following subsections.

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9.1.2.3.1 Rights Arising Under the General Mining Laws

Rights arising under the general mining laws are as follows: [INN 9.1.2.3.1-1]

9.1.2.3.2 Easements for Right-of-Way

Easements for right-of-way are as follows: [INN 9.1.2.3.2-1]

9.1.2.3.3 All Other Rights Arising Under Lease, Rights of Entry, Deed, Patent, Mortgage, Appropriation, Prescription, or Otherwise

All other rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise are as follows: [INN 9.1.2.3.3-1]

9.1.2.4 Existing Future Subsurface Interests of Record in Lands Within the Controlled Area

Existing present subsurface interests of record in lands within the controlled area are found in the following subsections.

9.1.2.4.1 Rights Arising Under the General Mining Laws

Rights arising under the general mining laws are as follows: [INN 9.1.2.4.1-1]

9.1.2.4.2 Easements for Right-of-Way

Easements for right-of-way are as follows: [INN 9.1.2.4.2-1]

9.1.2.4.3 All Other Rights Arising Under Lease, Rights of Entry, Deed, Patent, Mortgage, Appropriation, Prescription, or Otherwise

All other rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise are as follows: [INN 9.1.2.4.3-1]

9.1.2.5 Acquired Lands Within the Controlled Area that are Under the Jurisdiction and Control of DOE

Acquired lands within the controlled area that are under the jurisdiction and control of DOE are as follows: [INN 9.1.2.5-1]

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9.1.2.6 Lands Within the Controlled Area that have been Permanently Withdrawn and Reserved for DOE Use

Lands within the controlled area that have been permanently withdrawn and reserved for DOE use are as follows: [INN 9.1.2.6-1]

9.1.3 Identification of Legal Interests to be Obtained

(See Figure 9.1.3-1 [INN 9.1.3-1])

9.1.3.1 Legal Authority

The following legal authority pertains to identification of legal interests to be obtained within the controlled area:

9.1.3.1.1 Statutes

The following statutes pertain to identification of legal interests to be obtained: [INN 9.1.3.1.1-1]

9.1.3.1.2 Judicial Decisions

The following judicial decisions pertain to identification of legal interests to be obtained within the controlled area. [INN 9.1.3.1.2-1]

9.1.3.2 Encumbrances That DOE Proposes Not to Acquire

The following subsections provide an explanation pertaining to encumbrances that DOE proposes not to acquire.

9.1.3.2.1 Identification

The following identifies the legal interests that DOE proposes not to acquire: [INN 9.1.3.2.1-1]

9.1.3.2.2 Why They are Not Significant to Achievement of the Purpose of 10 CFR 60

The following represents the rationale for identifying encumbrances that DOE proposes not to acquire, or are insignificant to achieving the purpose of 10 CFR 60: [INN 9.1.3.2.2-1]

9.1.3.3 Identification of Relevant Legal Records and Their Locations

(See Table 9.1.3.3-1 [INN 9.1.3.3-1])

Identification of relevant legal records and their locations is as follows: [INN 9.1.3.3-2]

9.1.4 Water Rights Within the Controlled Area

Water rights within the controlled area are as follows: [INN 9.1.4-1]

9.1.4.1 Identification of Water Rights Needed to Accomplish the Purpose of the GROA

The identification of water rights needed to accomplish the purpose of the GROA is as follows: [INN 9.1.4.1-1]

9.1.4.1.1 Water for Personnel Needs

Water for personnel needs consists of the following: [INN 9.1.4.1.1-1]

9.1.4.1.2 Water for Equipment Needs

Water for equipment needs consists of the following: [INN 9.1.4.1.2-1]

9.1.4.1.3 Fire Protection Water

Water needed for fire protection is as follows: [INN 9.1.4.1.3-1]

9.1.4.2 Quantitative Information by Water Category

The following is pertinent quantitative information by water category: [INN 9.1.4.2-1]

9.1.4.3 Qualitative Information by Water Category

The following is pertinent qualitative information by water category: [INN 9.1.4.3-1]

REFERENCES

Rautman, C.A., Whittet, B.C., and South, D.L., 1987. Definitions of Reference Boundaries for the Proposed Geologic Repository at Yucca Mountain, Nevada, SAND86-2157, (NNA.870811.0044)

10 CFR 2, Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders

10 CFR 60, Disposal of High-Level Radioactive Wastes in Geologic Repositories

YMP/CM-0011, Site Characterization Program Baseline (NNA.910625.0001)

DOE/RW-0199, Site Characterization Plan, Yucca Mountain Site, Nevada Research and Development Area, Nevada

Date: 03/31/95

Table 9.1.3.3-1 Relevant Legal Records and Their Locations

Relevant Legal Record (Title)	Location

[INN 9.1.3.3-1]

FIGURE CAPTIONS

Figure 9.1.1-1 Relevant Features Within the Controlled Area and Outside the Controlled Area [INN 9.1.1-1]

Map of controlled area and outside of controlled area, extending two miles beyond controlled area boundary. Map must show the area of the controlled area stated both in terms of acres and square kilometers.

Figure 9.1.1.2-1 Limits of the Underground Facility [INN 9.1.1.2-1]

An illustration showing the location of the repository within the controlled area and the horizontal distance from the repository to the boundary of the controlled area at the nearest point and at other selected points, showing its situation within the controlled area.

Figure 9.1.3-1 Existing Legal Interests to be Obtained [INN 9.1.3-1]

Map showing:

1. Existing legal interests defined in Subsection 9.1.2
2. Legal interests to be obtained, as defined in Subsection 9.1.3
3. Water rights (legal interests), as defined in Subsections 9.1.2, 9.1.3, and 9.1.4

Note: May require more than one figure to show legal interests.

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.1-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	Figure 9.1.1-1
Explicit description of the need information:	1. Map of controlled area boundaries 2. Area of controlled area (acres and square km)
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	None identified
Does the supporting data need to be QA?	

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.1.1.2-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	Figure 9.1.1.2-1
Explicit description of the need information:	Map of underground repository boundaries
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	None identified
Does the supporting data need to be QA?	

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.2.1.1-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of existing present surface interests of record consisting of rights arising under the general mining laws within the controlled area.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.2.1.2-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of existing present surface interests of record consisting of easements for right-of-way within the controlled area.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.2.1.3-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of existing present surface interests of record consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise within the controlled area. (Other than rights under the general mining laws and easements for right-of-way).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.2.2.1-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of existing future surface interests of record consisting of rights arising under the general mining laws within the controlled area.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.1.2.2.2-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of existing future surface interests of record consisting of easements for right-of-way within the controlled area.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.2.2.3-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of existing future surface interests of record consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise within the controlled area (other than rights under the general mining laws and easements for right-of-way).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.2.3.1-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of existing present subsurface interests of record consisting of rights arising under the general mining laws within the controlled area.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.1.2.3.2-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of existing present subsurface interests of record consisting of easement for right-of-way within the controlled area.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.2.3.3-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of existing present subsurface interests of record consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise within the controlled area (other than rights under the general mining laws and easements for right-of-way).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.2.4.1-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of existing future subsurface interests of record consisting of rights arising under the general mining laws within the controlled area.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.1.2.4.2-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of existing future subsurface interests of record consisting of easement for right-of-way within the controlled area.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.2.4.3-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of existing future subsurface interests of record consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise within the controlled area (other than rights under the general mining laws and easements for right-of-way).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.2.5-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of acquired lands within the controlled area that are under the jurisdiction and control of DOE.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.2.6-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of lands within the controlled area that have been permanently withdrawn and reserved for DOE use.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.3-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	Figure 9.1.3-1
Explicit description of the need information:	<p>Provide a map of the Existing Legal Interest to be Obtained.</p> <p>The map should show:</p> <ul style="list-style-type: none"> a) existing legal interests defined in Subsection 9.1.2; b) legal interests to be obtained, as defined in Subsection 9.1.3; and c) water rights (legal interests), as defined in Subsections 9.1.2, 9.1.3, and 9.1.4. <p>NOTE: May require more than one figure to show legal interests.</p>
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

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Date: 03/31/95

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INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.3.1.1-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of statutes that pertain to identification of legal interest to be obtained within the controlled area.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.3.1.2-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Description of judicial decisions that pertain to identification of legal interests to be obtained within the controlled area.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.3.2.1-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of encumbrances that DOE proposes not to acquire within the controlled area.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.3.2.2-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Explanation of why identified encumbrances that DOE proposes not to acquire within the controlled area are not significant to achievement of the purpose of 10 CFR 60.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.3.3-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	Table 9.1.3.3-1
Explicit description of the need information:	Provide a listing of the relevant legal records concerning controlled area real property legal interests and their locations.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.3.3-2
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of relevant legal records pertaining to rights within the controlled area and their locations.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.4-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of water rights within the controlled area.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.4.1-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of water rights needed to accomplish the purpose of the GROA.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.4.1.1-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of water rights needed to ensure an adequate amount for personnel needs within the GROA.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.1.4.1.2-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of water rights needed to ensure an adequate amount for equipment needs within the GROA.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.4.1.3-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of water rights needed to ensure an adequate amount for fire protection within the GROA.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.4.2-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Pertinent quantitative information by water category regarding water needed within the GROA.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

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Date information will be available:	
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MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.1.4.3-1
Section Number and Title:	9.1 PLANS FOR RESTRICTING CONTROLLED AREA ACCESS
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Pertinent qualitative information by water category regarding water needed within the GROA.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

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If the data needed is QA, then the QA source document number is:	

MGDS License Application Annotated Outline

Section 9.2 Plans for Regulating Land Use Outside the Controlled Area

Date: 03/31/95

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- 9.2.3.4-1 Existing Legal Interests in Areas of DOE Concern Outside the Controlled Area [INN 9.2.3.4-1]

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- 9.2.1-1 Map (suggested caption - Areas of DOE Concern Outside the Controlled Area) showing areas outside the controlled area within which DOE must exercise jurisdiction and control of surface and subsurface estates to prevent adverse human actions that could significantly reduce the geologic repository's capability for isolation. Map to show relevant features (see Subsection 9.2.1).
- 9.2.1.1-1 The legal description of the (legal) interests of concern outside the controlled area.
- 9.2.1.2-1 Human actions (outside the controlled area) considered to have the potential to affect the geologic repository.
- 9.2.2-1 Provide a map of the existing legal interests.
- 9.2.2.1.1-1 Existing present surface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under the general mining laws.
- 9.2.2.1.2-1 Existing present surface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of easements for right-of-way.
- 9.2.2.1.3-1 Existing present surface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise (excluding rights arising under the general mining laws and easements for right-of-way).
- 9.2.2.2.1-1 Existing future surface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under the general mining laws.
- 9.2.2.2.2-1 Existing future surface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of easements for right-of-way.
- 9.2.2.2.3-1 Existing future surface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under lease, rights of entry, deed, patent, mortgages, appropriation, prescription, or otherwise (excluding rights arising under the general mining laws and easements for right-of-way).

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- 9.2.2.3.1-1 Existing present subsurface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under the general mining laws.
- 9.2.2.3.2-1 Existing present subsurface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of easements for right-of-way.
- 9.2.2.3.3-1 Existing present subsurface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise (excluding rights arising under the general mining laws and easements for right-of-way).
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- 9.2.2.5.1.1-1 Identification of water rights for personnel needs within the adjacent areas of concern (outside the controlled area).
- 9.2.2.5.1.2-1 Identification of water rights for equipment needs within the adjacent areas of concern (outside the controlled area).
- 9.2.2.5.1.3-1 Identification of water rights for fire protection needs within the adjacent areas of concern (outside the controlled area).
- 9.2.2.5.2-1 Quantitative information by water category regarding water rights within the adjacent areas of concern (outside the controlled area).
- 9.2.2.5.3-1 Qualitative information by water category regarding water rights within the adjacent areas of concern (outside the controlled area).

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LIST OF INFORMATION NEEDS (continued)

- 9.2.2.6-1 Evaluation of the extent to which, in the absence of unanticipated processes and events, DOE's jurisdiction and control of the legal interests defined in Subsections 9.2.2.1 through 9.2.2.5 (see related INNs) would serve to prevent adverse human actions that could significantly reduce the geologic repository's capability for isolation.
- 9.2.2.7-1 Identification of relevant existing legal records pertaining to the legal interests defined in Subsections 9.2.2.1 through 9.2.2.5 (see related INNs), and their locations.
- 9.2.3.1.1-1 Statutes applicable to the legal interests to be obtained within the adjacent areas of concern (outside the controlled area).
- 9.2.3.1.2-1 Judicial decisions applicable to the legal interests to be obtained within the adjacent areas of concern (outside the controlled area).
- 9.2.3.2.1-1 Identification of encumbrances the DOE proposes not to acquire within the adjacent areas of concern (outside the controlled area).
- 9.2.3.2.2-1 Explanation of why the identified encumbrances that DOE proposes not to acquire within the adjacent areas of concern (outside the controlled area) (see INN 9.2.3.2.1-1) are not significant to achievement of the purposes of 10 CFR 60.
- 9.2.3.3-1 Identification of relevant legal records to be obtained pertaining to the legal interests within the adjacent areas of concern (outside the controlled area).
- 9.2.3.4-1 Map (suggested title - Existing Legal Interests in Areas of DOE Concern Outside the Controlled Area) showing:
- a) Existing legal interests defined in Subsection 9.2.2,
 - b) Legal interests to be obtained, as defined in Subsection 9.2.3, and
 - c) Water rights (legal interests) existing and to be obtained.
- 9.2.3.4.1-1 Identification of water rights (legal interests) needed to satisfy equipment needs within the scope of Subsection 9.2.3.4 (water rights within the adjacent areas of concern needed to accomplish the purpose of the GROA or needed to preclude potential adverse human actions that could significantly reduce the geologic repository's capability for isolation).

LIST OF INFORMATION NEEDS (continued)

- 9.2.3.4.2-1 Identification of water rights (legal interests) needed to satisfy equipment needs within the scope of Subsection 9.2.3.4 (water rights within the adjacent areas of concern needed to accomplish the purpose of the GROA or needed to preclude potential adverse human actions that could significantly reduce the geologic repository's capability for isolation.
- 9.2.3.4.3-1 Identification of water rights (legal interests) needed to satisfy fire protection needs within the scope of Subsection 9.2.3.4 (water rights within the adjacent areas of concern needed to accomplish the purpose of the GROA or needed to preclude potential adverse human actions that could significantly reduce the geologic repository's capability for isolation.
- 9.2.3.4.4-1 Identification of water rights (legal interests) needed to satisfy the requirements to control potential adverse human actions detrimental to the achievement of the purposes of 10 CFR 60 within the scope of Subsection 9.2.3.4 (water rights within the adjacent areas of concern needed to accomplish the purpose of the GROA or needed to preclude potential adverse human actions that could significantly reduce the geologic repository's capability for isolation.
- 9.2.3.4.5-1 Quantitative information by water category within the scope of Subsection 9.2.3.4 (water rights within the adjacent areas of concern needed to accomplish the purpose of the GROA or needed to preclude potential adverse human actions that could significantly reduce the geologic repository's capability for isolation.
- 9.2.3.4.6-1 Qualitative information by water category within the scope of Subsection 9.2.3.4 (water rights within the adjacent areas of concern needed to accomplish the purpose of the GROA or needed to preclude potential adverse human actions that could significantly reduce the geologic repository's capability for isolation.

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9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA

This section identifies the areas of concern adjacent to the controlled area, the existing present and future legal interests, and the legal interests to be obtained and discusses whether the repository project is in compliance with 10 CFR 60.121.

9.2.1 Identification of Adjacent Areas of Concern

(See Figure 9.2.1-1). [INN 9.2.1-1]

9.2.1.1 Legal Description of Areas of Concern (Outside the Controlled Area)

The legal description of areas of concern (outside the controlled area) is as follows:
[INN 9.2.1.1-1]

9.2.1.2 Human Actions (Outside the Controlled Area) Considered to Have the Potential to Affect the Geologic Repository

Human actions (outside the controlled area) considered to have the potential to affect the geologic repository are: [INN 9.2.1.2-1]

9.2.2 Identification of Existing Legal Interests

Map showing areas, outside the controlled area, within which DOE must exercise jurisdiction and control of surface and subsurface estates so as to prevent adverse human actions that could significantly reduce the geologic repository's capability for isolation. Map to show relevant features, Figure 9.2.2-1. [INN 9.2.2-1]

9.2.2.1 Existing Present Surface Interests of Record in Lands Within the Adjacent Areas of Concern (Outside the Controlled Area)

9.2.2.1.1 Rights Arising Under the General Mining Laws

Existing present surface interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under the general mining laws are as follows: [INN 9.2.2.1.1-1]

9.2.2.1.2 Easements for Right-of-Way

Existing present surface interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of easements for right-of-way are: [INN 9.2.2.1.2-1]

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9.2.2.1.3 All Other Rights Arising Under Lease, Rights of Entry, Deed, Patent, Mortgage, Appropriation, Prescription, or Otherwise

Existing present surface interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise (excluding rights arising under the general mining laws and easements for right-of-way) are as follows: [INN 9.2.2.1.3-1]

9.2.2.2 Existing Future Surface Interests of Record in Lands Within the Adjacent Areas of Concern (Outside the Controlled Area)**9.2.2.2.1 Rights Arising Under the General Mining Laws**

Existing future surface interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under the general mining laws are as follows: [INN 9.2.2.2.1-1]

9.2.2.2.2 Easements for Right-of-Way

Existing future surface interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of easements for right-of-way are as follows: [INN 9.2.2.2.2-1]

9.2.2.2.3 All Other Rights Arising Under Lease, Rights of Entry, Deed, Patent, Mortgage, Appropriation, Prescription, or Otherwise

Existing future surface interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise (excluding rights arising under the general mining laws and easements for right-of-way) are as follows: [INN 9.2.2.2.3-1]

9.2.2.3 Existing Present Subsurface Interests of Record Within the Adjacent Areas of Concern (Outside the Controlled Area)**9.2.2.3.1 Rights Arising Under the General Mining Laws**

Existing present subsurface interests of record within the adjacent areas of concern (outside the controlled area) consisting of rights arising under the general mining laws are as follows: [INN 9.2.2.3.1-1]

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9.2.2.3.2 Easements for Right-of-Way

Existing present subsurface interests of record within the adjacent areas of concern (outside the controlled area) consisting of easements for right-of-way are as follows:
[INN 9.2.2.3.2-1]

9.2.2.3.3 All Other Rights Arising Under Lease, Rights of Entry, Deed, Patent, Mortgage, Appropriation, Prescription, or Otherwise

Existing present subsurface interests of record within the adjacent areas of concern (outside the controlled area) consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise (excluding rights arising under the general mining laws and easements for right-of-way) are as follows: [INN 9.2.2.3.3-1]

9.2.2.4 Existing Future Subsurface Interests of Record in Lands Within the Adjacent Areas of Concern (Outside the Controlled Area)**9.2.2.4.1 Rights Arising Under the General Mining Laws**

Existing future subsurface interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under the general mining laws are as follows: [INN 9.2.2.4.1-1]

9.2.2.4.2 Easements for Right-of-Way

Existing future subsurface interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of easements for right-of-way are as follows: [INN 9.2.2.4.2-1]

9.2.2.4.3 All Other Rights Arising Under Lease, Rights of Entry, Deed, Patent, Mortgage, Appropriation, Prescription, or Otherwise

Existing future subsurface interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise (except for rights arising under the general mining laws and easements for right-of-way) are as follows: [INN 9.2.2.4.3-1]

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9.2.2.5 Water Rights Within the Adjacent Areas of Concern (Outside the Controlled Area)**9.2.2.5.1 Identification of Existing Water Rights****9.2.2.5.1.1 Water for Personnel Needs**

Water rights for personnel needs within the adjacent areas of concern (outside the controlled area) are identified as follows: [INN 9.2.2.5.1.1-1]

9.2.2.5.1.2 Water for Equipment Needs

Water rights for equipment needs within the adjacent areas of concern (outside the controlled area) are identified as follows: [INN 9.2.2.5.1.2-1]

9.2.2.5.1.3 Fire Protection Water

Water rights for fire protection needs within the adjacent areas of concern (outside the controlled area) are identified as follows: [INN 9.2.2.5.1.3-1]

9.2.2.5.2 Quantitative Information by Water Category

Quantitative information by water category regarding water rights within the adjacent areas of concern (outside the controlled area) are identified as follows: [INN 9.2.2.5.2-1]

9.2.2.5.3 Qualitative Information by Water Category

Qualitative information by water category regarding water rights within the adjacent areas of concern (outside the controlled area) are identified as follows: [INN 9.2.2.5.3-1]

9.2.2.6 Evaluation of the Extent to Which, in the Absence of Unanticipated Processes and Events, DOE's Jurisdiction and Control of the Legal Interests Would Serve to Prevent Adverse Human Actions that Could Significantly Reduce the Geologic Repository's Capability for Isolation

Evaluation of the extent to which, in the absence of unanticipated processes and events, DOE's jurisdiction and control of the legal interests defined in Subsections 9.2.2.1 through 9.2.2.5, above, would serve to prevent adverse human actions that could significantly reduce the geologic repository's capability for isolation is as follows, and is summarized in Table 9.2.2.6-1. [INN 9.2.2.6-1]

9.2.2.7 Identification of Existing Relevant Legal Records and Their Locations

Relevant existing legal records pertaining to the legal interests defined in Subsections 9.2.2.1 through 9.2.2.5, above, and their locations are identified as follows, and are summarized in Table 9.2.2.7-1. [INN 9.2.2.7-1]

9.2.3 Identification of Legal Interests to be Obtained Within the Adjacent Areas of Concern (Outside the Controlled Area)**9.2.3.1 Legal Authority****9.2.3.1.1 Statutes**

Statutes applicable to the legal interests to be obtained within the adjacent areas of concern (outside the controlled area) are as follows: [INN 9.2.3.1.1-1]

9.2.3.1.2 Judicial Decisions

Judicial decisions applicable to the legal interests to be obtained within the adjacent areas of concern (outside the controlled area) are as follows: [INN 9.2.3.1.2-1]

9.2.3.2 Encumbrances that DOE Proposes Not to Acquire**9.2.3.2.1 Identification**

Identification of encumbrances that DOE proposes not to acquire within the adjacent areas of concern (outside the controlled area) is as follows: [INN 9.2.3.2.1-1]

9.2.3.2.2 Why They Are Not Significant to Achievement of the Purposes of 10 CFR 60

An explanation of why the identified encumbrances that DOE proposes not to acquire within the adjacent areas of concern (outside the controlled area) are not significant to the achievement of the purposes of 10 CFR 60 is as follows: [INN 9.2.3.2.2-1]

9.2.3.3 Identification of Relevant Legal Records to be Obtained and Their Locations

Relevant legal records to be obtained pertaining to the legal interests to be obtained within the adjacent areas of concern (outside the controlled area) and their locations are identified as follows, and summarized in Table 9.2.3.3-1. [INN 9.2.3.3-1]

9.2.3.4 Water Rights Within the Adjacent Areas of Concern Needed to Accomplish the Purpose of the GROA or Needed to Preclude Potential Adverse Human Actions that Could Significantly Reduce the Geologic Repository's Capability for Isolation

Figure 9.2.3.4-1 shows the existing legal interests defined in Subsection 9.2.2, legal interests to be obtained per Subsection 9.2.3, and existing legal water rights to be obtained.
[INN 9.2.3.4-1]

9.2.3.4.1 Water for Personnel Needs

Identification of water rights needed to satisfy personnel needs within the scope of Section 9.2.3.4 is as follows: [INN 9.2.3.4.1-1]

9.2.3.4.2 Water for Equipment Needs

Identification of water rights to satisfy equipment needs within the scope of Section 9.2.3.4 is as follows: [INN 9.2.3.4.2-1]

9.2.3.4.3 Fire Protection Water

Identification of water rights to satisfy fire protection needs within the scope of Section 9.2.3.4 is as follows: [INN 9.2.3.4.3-1]

9.2.3.4.4 Water Rights to Control Potential Adverse Human Actions Detrimental to the Achievement of the Purposes of 10 CFR 60

Identification of water rights to satisfy the requirement to control potential adverse human actions detrimental to the achievement of the purposes of 10 CFR 60 within the scope of Section 9.2.3.4 is as follows: [INN 9.2.3.4.4-1]

9.2.3.4.5 Quantitative Information for Water by Category

Quantitative information for water by category within the scope of Subsection 9.2.3.4 is as follows: [INN 9.2.3.4.5-1]

9.2.3.4.6 Qualitative Information for Water by Category

Qualitative information for water by category within the scope of Subsection 9.2.3.4 is as follows: [INN 9.2.3.4.6-1]

REFERENCES

10 CFR 2, Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders

10 CFR 60, Disposal of High-Level Radioactive Wastes in Geologic Repositories

YMP/CM-0011, Site Characterization Program Baseline

DOE/RW-0199, Site Characterization Plan, Yucca Mountain Site, Nevada Research and Development Area, Nevada

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Table 9.2.2.6-1 Prevention of Adverse Human Actions that Could Significantly Reduce Repository Isolation Capability Through DOE Jurisdiction and Control of Legal Interests Outside the Controlled Area

Potential Human Adverse Action	Possible Adverse Consequences	DOE Jurisdiction/ Control to Prevent (Legal Interest)	DOE Preventive Action

[INN 9.2.2.6-1]

Table 9.2.2.7-1 Existing Relevant Legal Records and Their Locations

Relevant Legal Record (Title)	Location	Existing	To Be Determined

[INN 9.2.2.7-1]

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Date: 03/31/95

YMP/94-05, Rev.0

Table 9.2.3.3-1 Relevant Legal Records to be Obtained and Their Locations

Relevant Legal Record (Title)	Location	Existing	To Be Determined

[INN 9.2.3.3-1]

FIGURE CAPTIONS

Figure 9.2.1-1 Areas of DOE Concern Outside the Controlled Area

Map showing areas, outside the controlled area, within which DOE must exercise jurisdiction and control of surface and subsurface estates so as to prevent adverse human actions that could significantly reduce the geologic repository's capability for isolation. Map to show relevant features. [INN 9.2.1-1]

Figure 9.2.2-1 Map of Existing Legal Interests [INN 9.2.2-1]

Map showing:

1. Existing legal interests defined in Subsection 9.2.2
2. Legal interests to be obtained, as defined in Subsection 9.2.3
3. Water rights (legal interests), existing and to be obtained

Note: More than one figure may be needed.

Figure 9.2.3.4-1 Existing Legal Interests in Areas of DOE Concern Outside the Controlled Area [INN 9.2.3.4-1]

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Information Need Number:	INN 9.2.1-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	Figure 9.2.1-1
Explicit description of the need information:	Map (suggested caption - Areas of DOE Concern Outside the Controlled Area) showing areas outside the controlled area within which DOE must exercise jurisdiction and control of surface and subsurface estates to prevent adverse human actions that could significantly reduce the geologic repository's capability for isolation. Map to show relevant features (see Subsection 9.2.1).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
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If the data needed is QA, then the QA source document number is:	

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MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.1.1-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	The legal description of the (legal) interests of concern outside the controlled area.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.2.1.2-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Human actions (outside the controlled area) considered to have the potential to affect the geologic repository.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.2.2-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	Figure 9.2.2-1
Explicit description of the need information:	Provide a map of the existing legal interests.
Information will be used to support:	
The Information is needed by/for (date or event):	
Most likely source of the Information:	
Information Source Description:	
Does the supporting data need to be QA?	

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.1.1-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Existing present surface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under the general mining laws.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.1.2-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Existing present surface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of easements for right-of-way.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.1.3-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Existing present surface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise (excluding rights arising under the general mining laws and easements for right-of-way).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.2.1-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Existing future surface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under the general mining laws.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.2.2-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Existing future surface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of easements for right-of-way.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.2.3-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Existing future surface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise (excluding rights arising under the general mining laws and easements for right-of-way).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.3.1-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Existing present subsurface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under the general mining laws.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.3.2-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Existing present subsurface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of easements for right-of-way.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.2.2.3.3-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Existing present subsurface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise (excluding rights arising under the general mining laws and easements for right-of-way).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.2.2.4.1-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Existing future subsurface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under the general mining laws.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.4.2-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Existing future subsurface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of easements for right-of-way.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.4.3-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Existing future subsurface legal interests of record in lands within the adjacent areas of concern (outside the controlled area) consisting of rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise (excluding rights arising under the general mining laws and easements for right-of-way).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.5.1.1-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of water rights for personnel needs within the adjacent areas of concern (outside the controlled area).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.5.1.2-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of water rights for equipment needs within the adjacent areas of concern (outside the controlled area).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.5.1.3-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of water rights for fire protection needs within the adjacent areas of concern (outside the controlled area).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.5.2-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Quantitative information by water category regarding water rights within the adjacent areas of concern (outside the controlled area).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.5.3-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Qualitative information by water category regarding water rights within the adjacent areas of concern (outside the controlled area).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.6-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	Table 9.2.2.6-1
Explicit description of the need information:	Evaluation of the extent to which, in the absence of unanticipated processes and events, DOE's jurisdiction and control of the legal interests defined in Subsections 9.2.2.1 through 9.2.2.5 (see related INNs) would serve to prevent adverse human actions that could significantly reduce the geologic repository's capability for isolation.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.2.7-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	Table 9.2.2.7-1
Explicit description of the need information:	Identification of relevant existing legal records pertaining to the legal interests defined in Subsections 9.2.2.1 through 9.2.2.5 (see related INNs), and their locations.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.3.1.1-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Statutes applicable to the legal interests to be obtained within the adjacent areas of concern (outside the controlled area).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.3.1.2-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Judicial decisions applicable to the legal interests to be obtained within the adjacent areas of concern (outside the controlled area).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

I-9.2-25

The above Annotated Outline text is guidance that may be used for the future development of an MGDS facility License Application.

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.3.2.1-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of encumbrances the DOE proposes not to acquire within the adjacent areas of concern (outside the controlled area).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

SKELETON TEXT

Date: 03/31/95

YMP/94-05, Rev.0

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.3.2.2-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Explanation of why the identified encumbrances that DOE proposes not to acquire within the adjacent areas of concern (outside the controlled area) (see INN 9.2.3.2.1-1) are not significant to achievement of the purposes of 10 CFR 60.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

I-9.2-27

The above Annotated Outline text is guidance that may be used for the future development of an MGDS facility License Application.

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.2.3.3-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	Table 9.2.3.3-1
Explicit description of the need information:	Identification of relevant legal records to be obtained pertaining to the legal interests within the adjacent areas of concern (outside the controlled area).
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.3.4-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	Figure 9.2.3.4-1
Explicit description of the need information:	<p>Map (suggested title - Existing Legal Interests in Areas of DOE Concern Outside the Controlled Area) showing:</p> <ul style="list-style-type: none"> a) Existing legal interests defined in Subsection 9.2.2, b) Legal interests to be obtained, as defined in Subsection 9.2.3, and c) Water rights (legal interests) existing and to be obtained.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.2.3.4.1-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of water rights (legal interests) needed to satisfy equipment needs within the scope of Subsection 9.2.3.4 (water rights within the adjacent areas of concern needed to accomplish the purpose of the GROA or needed to preclude potential adverse human actions that could significantly reduce the geologic repository's capability for isolation.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.3.4.2-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of water rights (legal interests) needed to satisfy equipment needs within the scope of Subsection 9.2.3.4 (water rights within the adjacent areas of concern needed to accomplish the purpose of the GROA or needed to preclude potential adverse human actions that could significantly reduce the geologic repository's capability for isolation.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.2.3.4.3-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of water rights (legal interests) needed to satisfy fire protection needs within the scope of Subsection 9.2.3.4 (water rights within the adjacent areas of concern needed to accomplish the purpose of the GROA or needed to preclude potential adverse human actions that could significantly reduce the geologic repository's capability for isolation.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

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MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.3.4.4-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Identification of water rights (legal interests) needed to satisfy the requirements to control potential adverse human actions detrimental to the achievement of the purposes of 10 CFR 60 within the scope of Subsection 9.2.3.4 (water rights within the adjacent areas of concern needed to accomplish the purpose of the GROA or needed to preclude potential adverse human actions that could significantly reduce the geologic repository's capability for isolation.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

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MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.3.4.5-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Quantitative information by water category within the scope of Subsection 9.2.3.4 (water rights within the adjacent areas of concern needed to accomplish the purpose of the GROA or needed to preclude potential adverse human actions that could significantly reduce the geologic repository's capability for isolation.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

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MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.2.3.4.6-1
Section Number and Title:	9.2 PLANS FOR REGULATING LAND USE OUTSIDE THE CONTROLLED AREA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Qualitative information by water category within the scope of Subsection 9.2.3.4 (water rights within the adjacent areas of concern needed to accomplish the purpose of the GROA or needed to preclude potential adverse human actions that could significantly reduce the geologic repository's capability for isolation.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

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Section 9.3 Plans for Regulating Land Use at the GROA

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- 9.3.1.1-1 Access control measures established within the "restricted area" land that DOE has obtained
- 9.3.1.2-1 Specific measures to protect individuals within the "restricted area" land that DOE has obtained
- 9.3.2.1-1 Access control measures established within the "restricted area" land that DOE will obtain
- 9.3.2.2-1 Specific measures to protect individuals within the "restricted area" land that DOE has obtained
- 9.3.3-1 Land to which the DOE has rights of access which are available to Nuclear Regulatory Commission inspections

Date: 03/31/95

9.3 PLANS FOR REGULATING LAND USE AT THE GROA

This section describes interests that the DOE has obtained or will obtain with respect to the "restricted area" as defined in 10 CFR 60. [This section must demonstrate that the DOE can control access as necessary to protect individuals from radiation and radioactive materials. Also to be identified are those lands constituting the geologic repository and adjacent areas for which the DOE has rights of access that are, accordingly, available to the Nuclear Regulatory Commission to accomplish its inspection activities. It will be necessary to develop the regulatory land use plans to be presented in this section to comply with requirements of 10 CFR 60.121.]

9.3.1 "Restricted Area" Land that the DOE has Obtained

(See Figure 9.3.1-1 [INN 9.3.1-1])

9.3.1.1 Access Control Measures

Access control measures established within the "restricted area" land that the DOE has obtained are as follows: [INN 9.3.1.1-1]

9.3.1.2 Specific Measures to Protect Individuals

Specific measures to protect individuals within the "restricted area" land that the DOE has obtained are as follows: [INN 9.3.1.2-1]

9.3.2 "Restricted Area" Land that the DOE Will Obtain

(See Figure 9.3.1-1 [INN 9.3.1-1])

9.3.2.1 Access Control Measures

Access control measures within the "restricted area" land that the DOE will obtain are as follows: [INN 9.3.2.1-1]

9.3.2.2 Specific Measures to Protect Individuals

Specific measures to protect individuals within the "restricted area" lands that the DOE will obtain are as follows: [INN 9.3.2.2-1]

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9.3.3 Land to Which the DOE Has Rights of Access and Which Are Available to Nuclear Regulatory Commission Inspections

(See Figure 9.3.1-1 [INN 9.3.1-1])

Land to which the DOE has rights of access which are available to the Nuclear Regulatory Commission inspections are described as follows: [INN 9.3.3-1]

REFERENCES

10 CFR 2, Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders

10 CFR 60, Disposal of High-Level Radioactive Wastes in Geologic Repositories

YMP/CM-0011, Site Characterization Program Baseline

DOE/RW-0199, Site Characterization Plan, Yucca Mountain Site,
Nevada Research and Development Area, Nevada

FIGURE CAPTIONS

Figure 9.3.1-1 "Restricted Area" Land and Land to Which the DOE Has Rights of Access
[INN 9.3.1-1]

Map showing:

1. "Restricted Area" Land the DOE Has Obtained
2. "Restricted Area" Land the DOE Will Obtain
3. Land to which the DOE has Rights of Access

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Information Need Number:	INN 9.3.1-1
Section Number and Title:	9.3 PLANS FOR REGULATING LAND USE AT THE GROA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	Figure 9.3.1-1
Explicit description of the need information:	Access control measures established within the "restricted area" land that the DOE has obtained.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
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If the data needed is QA, then the QA source document number is:	

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Information Need Number:	INN 9.3.1.1-1
Section Number and Title:	9.3 PLANS FOR REGULATING LAND USE AT THE GROA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Access control measures established within the "restricted area" land that the DOE has obtained.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
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If the data needed is QA, then the QA source document number is:	

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MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.3.1.2-1
Section Number and Title:	9.3 PLANS FOR REGULATING LAND USE AT THE GROA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Specific measures to protect individuals within the "restricted area" land that the DOE has obtained.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

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MGDS LA Annotated Outline Form A: Information Need	
Information Need Number:	INN 9.3.2.1-1
Section Number and Title:	9.3 PLANS FOR REGULATING LAND USE AT THE GROA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Access control measures established within the "restricted area" land that the DOE will obtain.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
Deliverable providing information:	
If the data needed is QA, then the QA source document number is:	

Date: 03/31/95

MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.3.2.2-1
Section Number and Title:	9.3 PLANS FOR REGULATING LAND USE AT THE GROA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Specific measures to protect individuals within the "restricted area" land that the DOE has obtained.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
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MGDS LA Annotated Outline Form A: Information Need

Information Need Number:	INN 9.3.3-1
Section Number and Title:	9.3 PLANS FOR REGULATING LAND USE AT THE GROA
Lead Author/Support Author and Phone:	Ken Ashe (702) 794-7665
Primary LA AO Table or Figure INN supports (if applicable):	N/A
Explicit description of the need information:	Land to which the DOE has rights of access which are available to Nuclear Regulatory Commission inspections.
Information will be used to support:	
The Information is needed by/for (date or event):	TBD
Most likely source of the Information:	
Information Source Description:	TBD
Does the supporting data need to be QA?	N/A

INTEGRATOR (PMO):	
Date information will be available:	
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If the data needed is QA, then the QA source document number is:	

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Chapter 10.0 Quality Assurance

Date: 03/31/95

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Table 10.0-1 QA Programs for Various Activities Associated with the Geologic Repository

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10.0 INTRODUCTION

10 CFR 60, *Disposal of Radioactive Wastes in Geologic Repositories*, Section 150, states that "quality assurance" (QA) comprises all those planned and systematic actions necessary to provide adequate confidence that the geologic repository and its subsystems or components will perform satisfactorily in service. Section 150 further states that QA includes quality control, which comprises those QA actions related to the physical characteristics of a material, structure, component, or system to predetermined requirements.

10 CFR 60.151 defines applicability of the QA program, stating that the QA program applies to all systems, structures, and components important to safety, to design and characterization of barriers important to waste isolation, and to activities related thereto. Section 151 specifies that these activities include: site characterization, facility and equipment construction, facility operation, performance confirmation, permanent closure, and decontamination and dismantling of surface facilities.

10 CFR 60.152 prescribes that the U.S. Department of Energy shall implement a QA program based on the criteria of 10 CFR 50, *Domestic Licensing of Production and Utilization*, Appendix B, as applicable, and appropriately supplemented by additional criteria as required by 10 CFR 60.151.

The Office of Civilian Radioactive Waste Management (OCRWM) *Quality Assurance Requirements and Description*, (QARD), DOE/RW-0333P, serves as the QA program requirements document for program activities performed by OCRWM. The QARD reflects OCRWM QA policies and requirements is the principal document of the Mined Geologic Disposal System (MGDS) QA program. Sections 1 through 18 of the QARD, including the supplements and appendices, describe the provisions established by OCRWM to meet the requirements of the QARD. Appendix A of the QARD describes amplifications to the QA program requirements which are specific to the geologic repository.

[The geologic repository will be designed, constructed, operated, and closed pursuant to an approved QA program.] Subcontractor/affected organization QA procedures implement the requirements of the QARD.

[The QA programs applicable to each phase (Site Characterization, Design and Construction, Operations, Permanent Closure, Decontamination, and Decommissioning) (Table 10.0-1) will evolve from phase to phase and within the overall OCRWM QARD umbrella requirements, and are specific to each phase and subcontractor's/affected organization's workscope. The QA program criteria which will be applicable to each phase will be defined in each subcontractor's/affected organization's documented, OCRWM-approved QA program. Applicability specifics are discussed in Section 10.1.]

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- 10.0.1 Application of QA Programs to Structures, Systems, and Components (SSCs) Important to Safety and Waste Isolation**
- 10.0.1.1 Identification of SSCs Important to Safety
(Also see Section 4.2)**
- 10.0.1.2 Description of Analyses Used To Determine SSCs Important to Safety**
- 10.0.1.3 Engineered Barriers Important to Waste Isolation That Are Subject to QA Programs**
- 10.0.1.4 Evaluations That Were Used to Identify Engineered Barriers Important to Waste Isolation and Subject to QA Programs**
- 10.0.1.5 SSCs and Engineered Barriers Identified Above and Their Descriptions Are Incorporated into the 10 CFR 60, Subpart G, QA Programs for Site Characterization (See Section 10.1.1), Design, and Construction (See Section 10.1.2), and Operations (See Section 10.1.4).**
- 10.0.2 Activities Related to Items on the Q-List (YMP/90-55Q) (See also Chapter 4).**
- 10.0.3 QA Program Description for 10 CFR 60.131(a) Items Other than Those Important to Safety or Waste Isolation**

This QA program applies to 10 CFR 60.131(a) items included in the category of "Radiological protection," and responds to the provisions that "The geologic repository operations area shall be designed to maintain radiation doses, levels, and concentrations of radioactive material in the air in restricted areas within the limits specified in part 20 of this chapter." Items and activities related to radiological protection are covered by the QA program in place during each phase (site characterization, design and construction, etc.) and these items and activities are evaluated and placed on the Q-List in a manner similar to that used for items important to safety and waste isolation. See Section 10.1 for specifics of how this evaluation is accomplished.

- 10.0.4 Assessment of Activities During Site Characterization and Their Compliance with QA Program Requirements (See Section 10.2).**

REFERENCES

10 CFR 50, Domestic Licensing of Production and Utilization

10 CFR 60, Disposal of High-Level Radioactive Wastes in Geologic Repositories

DOE/RW-0333P, Quality Assurance Requirements and Description

NRC, Review Plan for High-Level Waste Repository Quality Assurance Program Descriptions

ACRONYMS AND ABBREVIATIONS

MGDS	Mined Geologic Disposal System
NRC	Nuclear Regulatory Commission
OCRWM	Office of Civilian Radioactive Waste Management
QA	Quality Assurance
QARD	Quality Assurance Requirements and Description
SSC	Structures, Systems, and Components

Date: 03/31/95

Table 10.0-1 QA Programs for Various Activities Associated with the Geologic Repository

QA Program	Text Reference
QA Program for:	
Site Characterization	
Design and Construction	10.1.1
Performance Confirmation	10.1.2
Operations, Permanent	10.1.3
Closure, Decontamination, and Decommissioning	10.1.4
Other Items (e.g., non-nuclear occupational safety)	10.0.3