

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

**Standard Review Plan
for the
Review of Decommissioning Plans and Other information
Submitted to Support the Release of Nuclear Facilities**

DRAFT FOR REVIEW AND COMMENT ONLY

Enclosure

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 1.0 EXECUTIVE SUMMARY

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 1.0 EXECUTIVE SUMMARY

RESPONSIBILITY FOR REVIEW

<u>Primary:</u>	NMSS:	Division of Waste Management - Low-Level Waste and Decommissioning Projects Branch
		Division of Fuel Cycle Safety and Safeguards - Licensing Branch
	Region I:	Division of Nuclear Materials Safety - Decommissioning and Laboratory Branch
	Region II:	Division of Nuclear Materials Safety - Materials Licensing/Inspection Branch 1
	Region III:	Division of Nuclear Material Safety - Decommissioning Branch
	Region IV:	Division of Nuclear Material Safety - Nuclear Materials Licensing Branch, Fuel Cycle and Decommissioning Branch

Secondary: None

Support: None

AREAS OF REVIEW

The staff will review the general information supplied by the licensee or responsible party to determine if the decommissioning objective and general decommissioning schedule comply

with NRC requirements. This information should include: the name and address of the licensee or owner of the site; the location and address of the site; a brief description of the site and immediate environs; a summary of the licensed activities that occurred at the site, including the number and type of license(s); when the facility began and ceased using licensed material and the types and activities of licensed material authorized under the license(s); the nature and extent of contamination at the site; the decommissioning objective proposed by the licensee (i.e., restricted or unrestricted use); the derived concentration guidelines (DCGLs) proposed by the licensee or responsible party, the corresponding doses to these DCGLs and the method by which the DCGL was determined; if appropriate, the restrictions the licensee intends to use to limit doses as required in 10 CFR Part 20.1403 or 20.1404 and a summary of the activities undertaken by the licensee to comply with 10 CFR Part 20.1403(d) or 20.1404(a)(4); the proposed initiation and completion dates of decommissioning; and any post-remediation, pre-license termination activities (such as groundwater monitoring); and a statement that the licensee is requesting that its license be amended to incorporate the decommissioning plan.

The purpose of the staff's review of the Executive Summary is to determine, in a general manner, whether the decommissioning plan submitted by the licensee or responsible party should provide an adequate demonstration that the licensee or responsible party understands, and has complied with, the requirements of 10 CFR 20.1400-1404, 30.36, 40.42, 70.38, 72.54 for decommissioning and license termination. The staff will not perform a technical review of any information in the Executive Summary.

REVIEW PROCEDURES

Acceptance Review

The staff will review the general information supplied by the licensee or responsible party for completeness in accordance with this SRP.

Safety Evaluation

The material to be reviewed is informational in nature, and no specific detailed technical analysis is required. The staff will verify that the specific information (licensee or responsible party's name and address etc.) is correct. The staff will make a qualitative assessment as to the licensee's or responsible party's compliance with the requirements of 10 CFR 20.1402, regarding the estimated dose to the public from residual radioactive material at the completion of decommissioning and the method that the estimated dose from residual radioactivity was determined; the requirements of 10 CFR 20.1403 or 20.1404, if the decommissioning alternative proposed by the licensee is license termination under restricted conditions or using alternate criteria, and; if the decommissioning schedule summarized by the licensee or responsible party is reasonable.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 20.1400-1404, 30.36, 40.42, 70.38, 72.54

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee or responsible party should provide contributory evidence as to the licensee's or responsible party's understanding of the technical and institutional requirements for the decommissioning of licensed nuclear facilities. The staff's review should verify that the following information is included in the Executive Summary:

- the name and address of the licensee or owner of the site;
- the location and address of the site;
- a brief description of the site and immediate environs;
- a summary of the licensed activities that occurred at the site, including the number and type of license(s); when the facility began and ceased using licensed material and the types and activities of licensed material authorized and used under the license(s);
- the nature and extent of contamination at the site;
- the decommissioning objective proposed by the licensee (i.e., restricted or unrestricted use);
- the DCGLs for the site, the corresponding doses from these DCGLs and the method that the DCGLs were determined;
- a summary of the ALARA evaluations performed to support the decommissioning;
- if the licensee or responsible party requests license termination under restricted conditions, the restrictions the licensee intends to use to limit doses as required in 10 CFR Part 20.1403 or 20.1404 and a summary of institutional controls, financial assurance.
- if the licensee requests license termination under restricted conditions or using alternate criteria a summary of the public participation activities undertaken by the licensee to comply with 10 CFR Part 20.1403(d) or 20.1404(a)(4);
- the proposed initiation and completion dates of decommissioning;
- any post-remediation activities (such as groundwater monitoring) that the licensee proposes to undertake prior to requesting license termination; and
- a statement that the licensee is requesting that its license be amended to incorporate the decommissioning plan

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized in "Information Requirements," above, is included in the Executive Summary. The staff's review should verify that the decommissioning alternative and activities proposed by the licensee are or will be in compliance with the requirements of 10 CFR 20.1402 or 1403 as appropriate and that the decommissioning timeframe appears to be reasonable.

Sample Evaluation Findings

The NRC staff has reviewed the information in the Executive Summary of the Decommissioning Plan for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 1 (Executive Summary). Based on this review the NRC staff has determined that the licensee [insert name] has provided sufficient information on the facility history, current radiological condition, proposed decommissioning alternative and activities undertaken by the licensee to comply with 10 CFR 20. [insert as appropriate 1402 or 1403] to enable the NRC staff to conclude that the licensee appears to understand the NRC's requirements for decommissioning licensed nuclear facilities at 10 CFR 20. [insert as appropriate 1402 or 1403] and 10 CFR [insert, as appropriate 30, 40, 70, 72].

SUGGESTED FORMAT

1. Length: not to exceed 3 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30, 40, and 70" August 1989.
3. 1-2 paragraphs summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC position.s. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 2.0 FACILITY OPERATING HISTORY

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 2.0 FACILITY OPERATING HISTORY

RESPONSIBILITY FOR REVIEW

<u>Primary:</u>	NMSS:	Division of Waste Management - Low-Level Waste and Decommissioning Projects Branch
		Division of Fuel Cycle Safety and Safeguards - Licensing Branch
	Region I:	Division of Nuclear Materials Safety - Decommissioning and Laboratory Branch
	Region II:	Division of Nuclear Materials Safety - Materials Licensing/Inspection Branch 1
	Region III:	Division of Nuclear Material Safety - Decommissioning Branch
	Region IV:	Division of Nuclear Material Safety - Nuclear Materials Licensing Branch, Fuel Cycle and Decommissioning Branch
<u>Secondary:</u>	None	
<u>Support:</u>	None	

AREAS OF REVIEW

The staff will review the information supplied by the licensee or responsible party to determine if the description of the operating history of the facility is adequate to allow the staff to fully understand the types of radioactive material (and for Part 70 licenses, the hazardous chemicals produced from radioactive material) used at the site, the nature of the authorized use of radioactive materials at the site and the activities at the site that could have contributed to residual radioactive material being present at the site. This information should include the license number(s) and status of the license(s) held by the licensee or responsible party; descriptions of: the activities authorized under the current license; past authorized activities utilizing licensed radioactive material at the site; all previous decommissioning or remedial activities at the site; and descriptions of and the locations of all spills and releases of radioactive material at the site and all previous burials of radioactive material, including those where the material was subsequently exhumed.

REVIEW PROCEDURES

Acceptance Review

The staff will ensure that the decommissioning plan contains the information summarized under "Areas of Review," above. Staff will review the facility operating history portion of the decommissioning plan without assessing the technical accuracy or completeness of the information contained therein. The adequacy of this information will be assessed during the detailed technical review. Staff will review the decommissioning plan table of contents and the individual descriptions under "Areas of Review," above, to ensure that the licensee or responsible party has included this information in the decommissioning plan and to determine if the level of detail of the information appears to be adequate for the staff to perform a detailed technical review.

Safety Evaluation

The material to be reviewed is informational in nature, and no specific detailed technical analysis is required. The staff will verify that the specific information (license numbers, status and current authorized activities) is correct. The staff will make a qualitative assessment as to whether the licensee's or responsible party's descriptions of authorized activities, past operating activities, spills, and previous burials is adequate to serve as the basis for evaluating the accuracy of the descriptions of the radiological status of the facility and the decommissioning activities proposed by the licensee to remediate the facility can be conducted safely.

2.1 LICENSE NUMBER/STATUS/ AUTHORIZED ACTIVITIES

The purpose of the review of the description of the license number and authorized activities is to verify that the number and types of licenses and the status of each license is accurate and to familiarize the staff with the licensee's use of radioactive material at the site. This will enable the staff to evaluate the licensee's determination of the radiological status of the facility and the

licensee's planned decommissioning activities to ensure that the decommissioning can be conducted in accordance with NRC requirements.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand what licensed activities are currently being performed by the licensee. The staff's review should verify that the following information is included in the authorized activities section of the facility decommissioning plan:

- the radionuclides and maximum activities of radionuclides authorized and used under the current license;
- the chemical forms of the radionuclides authorized and used under the current license;
- a detailed description of how the radionuclides are currently being used at the site;
- the location(s) of use and storage of the various radionuclides authorized under current licenses; and
- a scale drawing or map of the building or site and environs showing current the locations of radionuclide use at the site;

EVALUATION FINDINGS

Evaluation Criteria

The staff's review should verify that the number and type of license(s) and the status of each license is accurate by comparing the information presented in the decommissioning plan to NRC license information. The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the authorized activities under the license. The staff should verify that this information is correct by comparing it to current NRC license information.

Sample Evaluation Findings

The NRC staff has reviewed the information in the Facility History section of the Decommissioning Plan for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 2(Facility History). Based on this review the NRC staff has determined that the licensee [insert name] has provided sufficient information to aid the NRC staff in evaluating the licensee's

determination of the radiological status of the facility and the licensee's planned decommissioning activities to ensure that the decommissioning can be conducted in accordance with NRC requirements. (Note that this finding incorporates the results of the staff's assessment under Sections 2.3, 2.4, and 2.5, below).

SUGGESTED FORMAT

1. Length: not to exceed 10 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. Bullets 1 and 2 in Acceptance Criteria, above should be no more than a few sentences. Up to 4 pages summarizing each of the remaining items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

2.2 LICENSE HISTORY

The purpose of the review of the description of the license history is to familiarize the staff with the licensee's previous uses of radioactive material at the site so that the staff can evaluate whether the licensee's determination of the radiological status of the facility is adequate and the licensee's planned decommissioning activities are appropriate to ensure that the decommissioning can be conducted in accordance with NRC requirements.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.35(g), 40.36(f), 70.25(g), 72.30(d)

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand what licensed activities were performed by the licensee in the past.

The staff's review should verify that the following information is included in the license history section of the facility decommissioning plan:

- the radionuclides and maximum activities of radionuclides authorized and used under all previous licenses;
- the chemical forms of the radionuclides authorized and used under all previous licenses;
- a detailed description of how the radionuclides were used at the site;

- the location(s) of use and storage of the various radionuclides authorized under all previous licenses as described in 10 CFR 30.35(g), 40.36(f), 70.25(g), 72.30(d); and
- a scale drawing or map of the site, facilities and environs showing previous locations of radionuclide use at the site as described in 10 CFR 30.35(g), 40.36(f), 70.25(g), 72.30(d).

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the license history under the license. The staff should verify that this information is correct by comparing it to historical NRC license information.

Sample Evaluation Findings

None. The staff should combine the assessment of this section of the decommissioning plan with Section 2.1 above.

SUGGESTED FORMAT

1. Length: not to exceed 20 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 3-5 pages summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

2.3 PREVIOUS DECOMMISSIONING ACTIVITIES

The purpose of the review of the license's previous decommissioning activities is to provide the staff with information that will aid the staff in evaluating the licensee's determination of the radiological status of the facility and whether previous decommissioning activities are sufficient to comply with current NRC criteria for license termination

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.35(g), 40.36(f), 70.25(g), 72.30(d)

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand what decommissioning activities were performed by the licensee in the past. The staff's review should verify that the following information is included in the previous decommissioning activities section of the facility decommissioning plan:

- a list or summary of areas at the site that were remediated in the past,
- a summary of the types, forms, activities and concentrations of radionuclides that were present in previously remediated areas;
- the activities that caused the areas to become contaminated;
- the procedures used to remediate the areas and the disposition of radioactive material generated during the remediation;
- a summary of the results of the final radiological evaluation of the previously remediated area including the locations and average radionuclide concentrations in the previously remediated areas, and
- a scale drawing or map of the site, facilities and environs showing the locations of previous remedial activity

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the previous decommissioning activities carried out under the license. The staff should verify, to the extent practicable, that this information is correct by comparing it to any historical NRC license information.

Sample Evaluation Findings

None. The staff should combine their assessment of this section of the decommissioning plan with Section 2.1, above.

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. Information requested for bullets 1,2 and 5 in Acceptance Criteria, above, may be presented in tabular form. 3-5 paragraphs summarizing each of the remaining items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

2.4 SPILLS

The purpose of the review of the license's description of spills¹, that have occurred at the site is to provide the staff with information that will aid in the staff's evaluation of the licensee's determination of the radiological status of the facility

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.35(g)(1), 40.36(f)(1), 70.25(g)(1), 72.30(d)(1)

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to determine whether spills that have occurred at the facility in the past could impact on the current radiological status of the facility. The staff's review should verify that the following information is included in the spills section of the decommissioning plan (note that this information may be presented concurrently with the information discussed in Section 2.4, Previous Decommissioning Activities, above):

- a summary of areas at the site where spills (or uncontrolled releases) of radioactive material occurred in the past;
- the types, forms, activities and concentrations of radionuclides involved in the spill or uncontrolled release, and;
- a scale drawing or map of the site, facilities and environs showing the locations of spills

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of spills that have occurred at the facility. The staff should verify that this information is correct by comparing it to any historical NRC license information.

¹ In this context a "spill" is defined as any controlled or uncontrolled release of radioactive material at the site that results in radioactive material being present in the environment or any unusual occurrences involving the spread of contamination in and around the facility, equipment, or site

Sample Evaluation Findings

None. The staff should combine their assessment of this section of the decommissioning plan with Section 2.2, above.

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 3-5 paragraphs summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

2.5 PRIOR ON-SITE BURIALS

The purpose of the review of the license's description of prior on-site burials is to provide the staff with information that will aid in the staff's evaluation of the licensee's determination of the radiological status of the facility

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 20.2002, 30.35(g)(3)(iii), 40.36(f)(3)(iii), 70.25(g)(3)(iii),

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

NUREG 1101, Volume 1 "On-site Disposal of Radioactive Waste" March 1986

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to determine whether previous burials at the facility could impact on the current radiological status of the facility. Note that all radioactive material at the site would be included in the staff's evaluation of the doses from residual radioactive material and as such would be included in any dose assessments that are performed for the facility. The staff's review should verify that the following information is included in the previous burials section of the decommissioning plan:

- a summary of areas at the site where radioactive material has been buried in the past;
- the types, forms, activities and concentrations of waste and radionuclides in the former burial, and;

- a scale drawing or map of the site, facilities and environs showing the locations of former burials.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of former burials at the site. The staff should verify that this information is correct by comparing it to historical NRC license information, as well, as information submitted pursuant to 10 CFR 20.302, 20.304 20.2002, 30.35(g)(3)(iii), 40.36(f)(3)(iii), 70.25(g)(3)(iii) and NUREG 1101, Volume 1. Note that the information required pursuant to 30.35(g)(3)(iii), 40.36(f)(3)(iii), 70.25(g)(3)(iii) may not be submitted to NRC until license termination. However, the licensee should include or use a summary of this information in developing this section of the decommissioning plan.

Sample Evaluation Findings

None. The staff should combine their assessment of this section of the decommissioning plan with Section 2.1, above.

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 3-5 paragraphs summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 3.0 FACILITY DESCRIPTION

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 3.0 FACILITY DESCRIPTION

RESPONSIBILITY FOR REVIEW

<u>Primary:</u>	NMSS:	Division of Waste Management - Decommissioning Branch
		Division of Fuel Cycle Safety and Safeguards - Licensing Branch
	Region I:	Division of Nuclear Materials Safety - Decommissioning and Laboratory Branch
	Region II:	Division of Nuclear Materials Safety - Materials Licensing/Inspection Branch 1
	Region III:	Division of Nuclear Material Safety - Decommissioning Branch
	Region IV:	Division of Nuclear Material Safety - Nuclear Materials Licensing Branch, Fuel Cycle and Decommissioning Branch
<u>Secondary:</u>	None	
<u>Support:</u>		Division of Waste Management - High Level Waste and Performance Assessment Branch

NOTE TO REVIEWERS OF THE DRAFT SRP:

THE GUIDANCE IN THIS SECTION OF THE SRP HAS BEEN DEVELOPED FOR SITES: (1) REQUIRING SITE-SPECIFIC DOSE MODELING; (2) RESIDUAL CONTAMINATION AT DEPTHS EXCEEDING 15 CM; AND/OR (3) HAVING ONSITE DISPOSAL CELLS FOR RADIOLOGICALLY CONTAMINATED DECOMMISSIONING WASTE. REFER TO SECTION X.X OF THE SRP FOR GUIDANCE ON THE INFORMATION NEEDED FOR LESS COMPLEX CASES

AREAS OF REVIEW

The staff will review the information supplied by the licensee or responsible party to determine if the description of the facility and environs is adequate to allow the staff to: (1) evaluate the licensee's estimation of doses to on and off-site populations during, and at the completion of decommissioning; and, (2) to evaluate the licensee's estimation of the impacts of the proposed decommissioning alternative on the site and surrounding areas. This information should include a description of the site and environs; a description of the current population distribution, including minority populations; a summary of current and potential future uses of land in and around the site; descriptions of the site meteorology, geology, seismology, climatology, surface and groundwater hydrology; descriptions of the natural and water resources at the site; a description of the ecology of the site; and, a summary of all endangered species at the site.

REVIEW PROCEDURES

Acceptance Review

The staff will review the decommissioning plan to ensure that, at a minimum, the decommissioning plan contains the information summarized under "Areas of Review," above. Staff will review the facility description portion of the decommissioning plan information without assessing the technical accuracy or completeness of the information. The adequacy of the information will be assessed during the detailed technical review. Staff will review the decommissioning plan table of contents and the individual descriptions under "Areas of Review," above, to ensure that the licensee or responsible party has included this information in the decommissioning plan and to determine if the level of detail of the information appears to be adequate for the staff to perform a detailed technical review.

Safety Evaluation

The material to be reviewed is generally informational in nature however, significant detailed technical analysis may be required. The staff will verify that the specific information concerning site meteorology, geology, seismology, climatology, surface and groundwater hydrology, geotechnical characteristics, natural and water resources, ecology and endangered species at

the site is complete and accurate. The staff will make a qualitative assessment as to whether the licensee's or responsible party's descriptions of the site and environs and summary of current and potential future land uses is adequate to serve as the basis for evaluating the licensee's or responsible party's dose and environmental impacts estimates.

3.1 SITE LOCATION AND DESCRIPTION

The purpose of the review of the description of the site location and description is to verify that sufficient information is presented to allow the NRC staff to understand the physical characteristics of the site and relationship of the site to surrounding areas. This will aid the staff in evaluating the licensee's or responsible party's dose and environmental impacts estimates and planned decommissioning activities to ensure that the decommissioning can be conducted in accordance with NRC requirements.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand the physical characteristics of the site. The staff's review should verify that the following information is included in the description of the site description and location section of the decommissioning plan:

- the size of the site in acres or square meters;
- the State and county in which the site is located;
- the names and distances to nearby communities, towns and cities;
- a description of the contours and features of the site;
- the elevation of the site;
- a description of property surrounding the site;
- the location of the site relative to prominent features such as rivers and lakes. To facilitate presentation of this information, U.S. Geological Survey (USGS) topographic maps may be provided;
- a map that shows the detailed topography of the site using a contour interval (such as 2 feet or 1 meter) and including plot plans, the locations of characterization borings and monitoring wells, and the positions and types of geologic characterization activities.
- the location of the nearest residences and all significant facilities or activities near the site

- a description of the facilities (buildings, parking lots, fixed equipment, etc.) at the site

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above, is included in the licensee's description of the site and environs. The staff's review should verify, to the maximum extent practicable, that the information supplied by the licensee or responsible party is accurate by comparing it to licensing and inspection information maintained in NRC files.

Sample Evaluation Findings

None. The staff does not need to comment on the accuracy of the information presented in the site description/ location section of the decommissioning plan

SUGGESTED FORMAT

1. Length: not to exceed 7 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

3.2 POPULATION DISTRIBUTION

The purpose of the review of the description of the population distribution is to determine if the licensee or responsible party has supplied sufficient information on the makeup and distribution of the population in the vicinity of the site to enable the NRC staff to evaluate the licensee's or responsible party's estimate of doses to off-site individuals during and at the completion of decommissioning and to determine if population characteristics warrant an evaluation of environmental justice issues.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

NMSS Policy and Procedures Letter 1-50 Revision X "Environmental Justice in NEPA Documents"

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to determine the population makeup and distribution in the vicinity of the site. The staff's review should verify that a summary of current and projected populations in the vicinity of the site, by principal compass sectors is included in the decommissioning plan. This summary should be sufficiently detailed to allow the determination of doses to off-site individuals via atmospheric pathways. In addition, the staff will verify that the makeup and distribution of minority and low-income populations are sufficiently described in the decommissioning plan as to allow the environmental justice evaluation described in Policy and Procedures Letter 1-50. The decommissioning plan should include the following:

- a summary of the current population in and around the site, by compass vectors
- a summary of the projected population in and around the site by compass vectors
- a list of minority populations by compass vectors
- demographic data by census block group to identify minority or low-income populations

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above, is included in the licensee's or responsible party's description of the distribution of populations around the site. The staff will verify the licensee's or responsible party's population data against available independent population data (e.g., information from the Census Bureau including any special census that may have been conducted, local and State agencies, and regional Councils of Government). The staff will evaluate project population information by comparing it to projections made by local planning boards or offices.

Sample Evaluation Findings

None. The staff should combine the assessment of this section of the decommissioning plan with Section 3.1 above, and 3.3 below (see Sample evaluation Findings at Section 3.3 below).

SUGGESTED FORMAT

1. Length: not to exceed 2 pages.
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 3-5 paragraphs summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

3.3 CURRENT/FUTURE LAND USE

The purpose of the description of current and future land use is to provide the staff with information that will aid the staff in evaluating the licensee's estimates of doses to on and off-site individuals during and at the completion of decommissioning.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to understand what current land uses are and what local, regional or State planning boards or office anticipate the future land uses to be at the site. The staff's review should verify that the licensee or responsible party has used all available data on land use, plans and trends in land use, land use controls (such as zoning), potential for growth, or other factors likely to inhibit or stimulate growth in the area by comparing it to publically available information from local, regional or State land use planning boards or offices. The decommissioning plan should include a description of the current land uses in and around the site and a summary of anticipated land uses.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's discussion of current and future land use. The staff should verify, to the extent practicable, that this information is correct by comparing it to publically available information on current land use in the vicinity of the site, land use trends in and around the site and expected future uses of the land in and around the site.

Sample Evaluation Findings

None.

SUGGESTED FORMAT

1. Length: not to exceed 3 pages

2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

3.4 METROLOGY AND CLIMATOLOGY

The purpose of the review of the license's description of metrology and climatology is to determine if the licensee has provided sufficient information to allow the NRC staff to evaluate the licensee's or responsible party's estimations of doses to on and off-site individuals during and at the completion of decommissioning operations.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

RegGuide 1.23 "Onsite Meteorological Programs" (Safety Guide 23)

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to determine how local weather patterns will effect the estimation of doses to on and off-site individuals during and at the completion of decommissioning operations. The staff's review should verify that the following information is included in the climatology and metrology section of the decommissioning plan:

- a description of the general climate of the region with respect to types of air masses, synoptic features (high- and low-pressure systems and frontal systems), general air-flow patterns (wind direction and speed), temperature and humidity, precipitation, and relationships between synoptic-scale atmospheric processes and local meteorological conditions;
- seasonal and annual frequencies of severe weather phenomena including tornados; water spouts, thunderstorms, lightning, hail, and high air pollution potential;
- weather-related radionuclide transmission parameters including average and extreme wind vectors and average and extreme duration and intensity of precipitation events;
- routine weather-related site deterioration parameters including precipitation intensity and duration, wind vectors, and temperature and pressure gradients;
- extreme weather-related site deterioration parameters including tornados, water spouts, thunderstorms, hail, and extreme air pollution (from offsite sources); and,
- a description of the local (site) meteorology in temperature, atmospheric water vapor, precipitation, fog, atmospheric stability and air quality;

- the National Ambient Air Quality Standards Category of the area in which the facility is located and, if the facility is not in a Category 1 zone, the closest and first downwind Category 1 Zone.

EVALUATION FINDINGS

Evaluation Criteria

The staff will review the licensee's or responsible party's description of the site climatology and metrology for completeness and adequacy of basic data. The wind and atmospheric stability data should be based on onsite data. The other summaries should be based on nearby representative stations with long record retention periods. When offsite data are used, the staff will determine how well the data represent site conditions and whether more representative data are available. The staff will use National Oceanic and Atmospheric Administration (NOAA) (U.S. Department of Commerce) State meteorological summaries ("State Climatological Summary"), local climatological data ("Local Climatological Data Annual Summary with Comparative Data"), and NOAA Environmental Data Service summaries pertinent to the site to evaluate the representativeness of stations and periods of record. The staff should be familiar with all primary meteorological data collection locations. The staff will ensure that all topographic maps and topographic cross-sections presented by the applicant are legible and well-labeled so that the information needed during the review can be readily extracted. Points of interest such as facility structures, site boundary, and buffer zone should be marked on all maps and diagrams.

The staff will compare the applicant's assessment of the effect of topography with standard assessments such as those presented in "Meteorology and Atomic Energy - 1968" (Slade, 1968) and decide whether the standard regulatory atmospheric diffusion models are appropriate for this site. The staff will review for completeness and authenticity the general climatic description of the region in which the site is located. Climatic parameters such as air masses, general air flow, pressure patterns, frontal systems, and temperature and humidity conditions reported by the applicant will be checked against standard references (Thorn, 1968; U.S. Department of Commerce, 1968) for appropriateness with respect to location and period of record. The staff will verify the applicant's description of the role of synoptic-scale atmospheric processes on local (site) meteorological conditions against the descriptions provided in "Climatic Atlas of the United States" and "Local Climatological Data - Annual Summary With Comparative Data" (both published by the U.S. Department of Commerce).

Because meteorological averages and extremes can only be obtained from stations in the region of the site that have long record retention periods and the stations are not usually very close to the site, the staff will first determine the representativeness of the data to site conditions and then ascertain the adequacy of the stations and their data. The staff will verify (1) recorded meteorological averages and extremes using standard publications such as "Storm Data", published by the U.S. Department of Commerce; (2) other averages and extremes using "State Climatological Summaries" and "Storm Data", published by the U.S. Department of Commerce; (3) the potential for high air pollution; (4) extreme winds and their distribution using

RegGuide 1.234 and "Metrology and Atomic Energy - 1968" (Slade, 1968); and, (5) gust factors using RegGuide 1.23

Sample Evaluation Findings

None.

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 3-5 paragraphs summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

3.5 GEOLOGY AND SEISMOLOGY

The purpose of the review of the licensee's or responsible party's description of the site geology and seismology is to determine if the licensee has provided sufficient information to allow the NRC staff to evaluate the licensee's or responsible party's estimations of doses to on and off-site individuals during and at the completion of decommissioning operations.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to determine how site geological and seismological characteristics will effect the estimation of doses to on and off-site individuals during and at the completion of decommissioning operations. The staff's review should verify that the geology and seismology section of the decommissioning plan contains the following information:

Geology

- a detailed description of the geologic characteristics of the site and the region around the site

- a discussion of the tectonic history of the region, regional geomorphology, physiography, stratigraphy, and geochronology. All tectonic structures should be identified, in particular folds and faults in the region around the site, and their geologic and structural history should be discussed. The relationship between seismicity and tectonic structures and the earthquake-generating potential of any active structures should be determined.
- a regional tectonic map showing the site location and its proximity to tectonic structures should be provided. Appropriate references of supporting documents should be provided with regional physiographic and topographic maps, geologic and structure maps, fault maps, stratigraphic sections, boring logs, and aerial photographs.
- a description of the structural geology of the region and its relationship to the site geologic structure should be discussed. Any faults, folds, open jointing, fractures, and shear zones in the region must be identified, and their significance to the facility should be discussed.
- a description of any crustal tilting, subsidence, karst terrain, landsliding, and erosion.
- a description of the surface and subsurface geologic characteristics of the site and its vicinity. The description should include local stratigraphic units and their accepted names, ages, genetic relationships, and lithologies. To facilitate the presentation, these descriptions should be accompanied by appropriately scaled geologic maps. Descriptions of mineralogy, particle size, organic materials, degree of cementation, zones of alteration, and depositional environment of unconsolidated strata should be included.
- a description of the geomorphology of the site, including USGS topographic maps that emphasize local geomorphic features pertinent to the site. The applicant should describe the geomorphic processes affecting the present-day topography of the disposal site and vicinity. Information should include descriptions of processes such as mass wasting, erosion, slumping, landsliding, and weathering where appropriate. The discussion of relevant geomorphic processes should include their rates, frequencies of occurrence, and controlling mechanisms or factors.
- a description of the location, attitude, and geometry of all known or inferred faults in the site and vicinity. Fault displacements should be identified and potential recurrence intervals addressed.
- a discussion of the nature and rates of deformation such as folding within the site and relate these to the local stress regime. Any joint sets within the site including their densities and orientations should be described, and their relative ages discussed. Remineralization and mineralization history of the various joint sets should also be discussed. Solution cavities and crevices in the bedrock should be described and discussed if applicable.

Seismology

- a description of the seismicity, tectonic characteristics of the site and region, correlation of earthquake activity with geologic structures and tectonic provinces, maximum earthquake potential, seismic wave transmission characteristics of the site, design earthquake, settlement and liquefaction, and geophysical methods for site characterization.

- a complete list of all historical earthquakes that have a magnitude of 3 or more or a modified Mercalli intensity of IV or more within 200 miles of the site. The listing should include all available information about the earthquakes such as epicenter coordinates, depth of focus, origin time, intensity, and magnitude, augmented by a map showing the locations of these earthquakes. The references from which the information was obtained should be indicated. In addition, any earthquake that induced geologic hazard (e.g., landsliding or liquefaction) should be identified, and the acceleration that caused the hazard should be provided.

EVALUATION FINDINGS

Evaluation Criteria

The staff will review for completeness the information on geologic site characterization in the decommissioning plan. If the information reflects the results of a thorough literature search and an adequate reconnaissance and physical examination of the regional and site conditions by the licensee or responsible party the decommissioning plan will be considered acceptable. Consultations with commercial companies and Federal, State, and local government agencies that may have had occasion to characterize the site will help ensure the adequacy of the characterization in the decommissioning plan. The review can be completed quickly if the decommissioning plan contains sufficient information to allow the staff to make an independent assessment of the licensee's or responsible party's assumptions, analyses, and conclusions. The staff will thoroughly review the information in the decommissioning plan to determine if all interpretations and conclusions are founded on sound geologic practice and do not exceed the limits of validity of the data in the decommissioning plan or of other data published in the literature.

Sample Evaluation Findings

None.

SUGGESTED FORMAT

1. Length: not to exceed 15 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 3-5 paragraphs summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

3.6 SURFACE WATER HYDROLOGY

ACCEPTANCE CRITERIA

The purpose of the review of the licensee's description of the surface water hydrology at the site is to determine if the licensee has provided sufficient information to allow the NRC staff to evaluate the licensee's or responsible party's estimations of doses to on and off-site individuals during and at the completion of decommissioning operations.

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

None

Evaluation Criteria

The information supplied by the licensee should be sufficient to enable the staff to determine whether surface water characteristics could impact on the doses to on or off-site individuals during or at the completion of decommissioning. The staff's review should verify that the following information is included in the surface water hydrology section of the decommissioning plan:

- a description of site drainage and surrounding watershed fluvial features, including important water users
- water resource data including maps, hydrographs, and stream records from other agencies (e.g., U.S. Geological Survey and U.S. Army Corps of Engineers).
- topographic maps of the site that show natural drainages and man-made features
- a description of the surface water bodies at the site and surrounding areas, including the location, size, shape, and other hydrologic characteristics of all streams, lakes, or coastal areas.
- a description of existing and proposed water control structures and diversions (both upstream and downstream that may influence the site).
- flow-duration data that indicate minimum, maximum, and average historical observations for surface water bodies in the site areas
- aerial photography and maps of the site and adjacent drainage areas identifying features such as drainage areas, surface gradients, and areas of flooding.
- an inventory of all existing and planned surface water users, whose intakes could be adversely affected by migration of radionuclides from the site. The inventory should include the owner, location, type, and amount of use; source of supply; type of intake; and surface water quality data.
- topographic and/or aerial photographs that delineate the 100-year floodplain at the site
- a description of any man-made changes to the surface water hydrologic system that may influence the potential for flooding at the site. (Such changes may include construction of reservoirs, urban development, strip mining, lumbering, etc.). The description of these changes should include the proximity of the affected area to the site, the surface water bodies affected, the size of the area affected, and the potential effects at the site.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the surface water features at the site. Acceptance of the information in the decommissioning plan will be based in part on a qualitative evaluation of the completeness and adequacy of the information and of maps. Descriptions and evaluations of structures, facilities, etc. are adequate if they are sufficiently complete to allow independent evaluations of the effects of flooding and intense rainfall. Site topographic maps are acceptable if they are of good quality, are legible and adequate in coverage to substantiate applicable data and analyses. The descriptions of the hydrologic characteristics of surface water features and water use are acceptable if they are detailed and generally correspond to those of the U.S. Geologic Survey (USGS), National Oceanographic and Atmospheric Administration, Soil Conservation Service, Corps of Engineers, or appropriate State and river basin agencies. Descriptions of existing or proposed reservoirs and dams that could influence conditions at the site should be based on reports of the USGS, U.S. Bureau of Reclamation, Corps of Engineers, and others; these reports normally include tabulations of drainage areas, types of structures, appurtenances, ownership, seismic and spillway design criteria, elevation-storage relationships, and short- and long-term storage allocations.

Sample Evaluation Findings

None.

SUGGESTED FORMAT

1. Length: not to exceed 15 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 3-5 paragraphs summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

3.7 GROUNDWATER HYDROLOGY

The purpose of the review of the license's description of groundwater hydrology section of the decommissioning plan is to determine if the licensee has provided sufficient information to allow the NRC staff to evaluate the licensee's or responsible party's estimations of doses to on and off-site individuals during and at the completion of decommissioning operations.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to determine how the groundwater characteristics of the site effect the doses to on or off-site individuals during or at the completion of decommissioning. The staff's review should verify that the following information is included in the groundwater hydrology section of the decommissioning plan:

- a description of the saturated zone including all potentially affected aquifers, the lateral extent, thickness, water-transmitting properties, recharge and discharge zones, groundwater flow directions and velocities, and other information that can be used to create an adequate conceptual model of the saturated zone.
- descriptions for monitor wells, including location, elevation, screened intervals, depths, construction and completion details, and hydrogeologic units monitored. The description should include domestic, industrial and/or municipal wells or other monitoring devices, if applicable, and any construction and completion details for these devices, when available. Descriptions of all aquifer tests should also be provided, including test data and a discussion of the assumptions, analysis, and test procedures used.
- physical parameters such as storage coefficients, transmissivities, hydraulic conductivities, porosities, and intrinsic permeabilities should be included.
- a description, to the extent practicable, of groundwater flow directions and velocities (horizontal and vertical) for each potentially affected aquifer. When applicable, the groundwater hydrology should be described by making use of hydrogeologic columns, cross-sections, and water table and/or potentiometric maps.
- a description of the unsaturated zone including descriptions of the lateral extent and thickness of permeable and impermeable zones, potential conduits of anomalously high flux, and direction and velocity of unsaturated flow.
- information on all monitor stations including location and depth
- a description of physical parameters including the spatial and stratigraphic distribution of the total and effective porosity; water content variations with time; saturated hydraulic conductivity; characteristic relationships between water content, pressure head, and hydraulic conductivity; and hysteretic behavior during wetting and drying cycles, especially during extreme conditions.
- a description of the numerical analyses techniques used to characterize the unsaturated and saturated zones including the model type, justification, documentation, verification, calibration and other associated information. In addition, the description should include the input data, data generation or reduction techniques, and any modifications to these data.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's or responsible party's description of the groundwater hydrology at the site. The staff will review the information on the saturated zone by evaluating the testing and monitoring program and sample collection procedure. The staff will evaluate the rationale for choosing particular sampling locations and verify that they are commensurate with the complexity of the saturated zone. The staff will confirm that acceptable procedures were used by the licensee or responsible party to collect, preserve, and analyze samples. Staff will determine that adequate quality control was used for the collection, preservation, and laboratory analyses of samples. The staff will evaluate the adequacy of non-applicant-constructed monitoring devices used in the characterization (including the characterization of seeps, springs, and private, municipal, or industrial wells in the vicinity of the proposed site). The staff will evaluate aquifer tests performed by the licensee or responsible party to ensure that applicable test methods incorporate proper assumptions, analyses, and test procedures. The staff will assess the accuracy of the transmissivity, storativity, and hydraulic conductivity results derived from testing. The staff will determine if groundwater will discharge to the surface within the site boundary and if fluctuations in the water table will result in interactions of groundwater with the residual radioactive material. Staff will confirm that the description of major hydrologic parameters, aerial extent of aquifers, recharge-discharge zones, flow rates and directions, and travel times, including seasonal fluctuations and long-term trends.

The staff will review the licensee's or responsible party's information on the unsaturated zone by evaluating the monitoring program and sample collection procedure. The staff will evaluate the rationale for choosing particular sampling locations and verify that they are commensurate with the complexity of the unsaturated zone. The staff will confirm that the description of the unsaturated zone incorporates the necessary field and laboratory data, including seasonal fluctuations and long-term trends. The staff will review the applicant's analysis of the likelihood of the development of perched aquifers and perform independent analyses, using accepted methods, to determine the adequacy of the description.

The evaluations described in the following paragraphs may be included in groundwater hydrology portion or dose modeling sections of the of the decommissioning plan.

The staff will evaluate the applicant's conceptual model that describes, to the extent practicable, all hydrogeologic processes and features, including the potential for deep percolation, recharge/discharge zones, areas of anomalous physical parameters affecting regional processes, extent of aquifers and confining layers, interactions between aquifers, and movement of groundwater in the saturated and unsaturated zone. The staff will review this model to determine its defensibility, conservatism, and adequate incorporation of data into a unified conceptual model.

The staff will evaluate the numerical analyses of groundwater data collected by the licensee or responsible party for the site and vicinity. This will normally involve analytical or numerical modeling. The staff will verify that the model type chosen for analysis is properly documented, verified, and calibrated and adequately simulates the physical system of the site and vicinity. The staff's will review the the modeling strategy used by the licensee or responsible party to assure that it is logical and defensible. The staff will review the adequacy of the model input data generation and reduction techniques. Modifications of input data, required for calibration, ,will be reviewed to ensure that the new values are realistic and defensible. Following its review of this information, the staff will determine whether the licensee's or responsible party's conclusions are adequate. Alternatively, the staff may decide to conduct an independent analysis. If the staff conducts an independent analysis, it will compare the results with those derived by the licensee or responsible party to determine if the applicant's results are adequate.

Sample Evaluation Findings

None.

SUGGESTED FORMAT

1. Length: not to exceed 20 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

3.8 NATURAL RESOURCES

The purpose of the review of the license's description of natural resources at the site is to aid the staff in evaluating the impacts that the decommissioning alternative chosen by the licensee may have on these resources and to evaluate whether the exploitation of these resources could impact on the licensee's or responsible party's dose estimates for the site.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to determine what natural resources are present at and in the vicinity of the site. The staff's review should verify that the following information is included in the natural resources section of the decommissioning plan:

- a description of the natural resources occurring at or near the site including metallic and nonmetallic minerals and ores; fuels, such as peat, lignite, and coal; hydrocarbons, including gas, oil, tar sands, and asphalt; geothermal resources; industrial mineral deposits, such as sand and gravel, clays, aggregate sources, shales, and building stone; timber; agricultural lands; and waters in the form of brines.
- a description of potable, agricultural, or industrial ground or surface waters including information on resource type, occurrence, location, extent, net worth, recoverability, and current and projected use.
- a description of economic, marginally economic, or subeconomic known or identified natural resources as defined in U.S. Geological Survey Circular 831.
- mineral, fuel, and hydrocarbon resources near and surrounding the site which, if exploited, would effect the licensee's or responsible party's dose estimates

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's or responsible party's description of the natural resources at the site.

The staff will determine if the licensee or responsible party has identified known resources as described in U.S. Geological Survey Circular 831. The staff will verify that the decommissioning plan describes economic, marginally economic, and subeconomic known resources as defined in U.S. Geological Survey Circular 831. On the basis of these data, the staff will evaluate the licensee's or responsible party's estimation of potential future exploitation considering market values and current and projected demand for the resource in question. On the basis of the resources identified, the staff will examine the potential for site disruption resulting from exploration and exploitation techniques including, but not limited to, augering, drilling, shaft mining, strip mining, bulldozing and other excavation, quarrying, bore-hole injection and pumping, uprooting of vegetation, blasting, stream diversion, and dam construction. These techniques are considered for the possibility of direct site intrusion as well as indirect effects such as alternation of groundwater tables or increase in erosion.

Sample Evaluation Findings

None.

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

3.9 ECOLOGY/ENDANGERED SPECIES

The purpose of the review of the license's description of the ecology and endangered species at the site is to determine if the decommissioning alternative chosen by the licensee will have an adverse impact on the ecology or endangered species

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(i), 70.38(g)(4)(i) and 72.54(g)(1)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to determine whether the decommissioning alternative chosen by the licensee will have an adverse impact on site ecology or endangered species at the site. The staff's review should verify that the following information is included in the previous burials section of the decommissioning plan:

- a list of commercially or recreationally important invertebrate species known to occur within 5 km of the site
- a list of all commercially important floral species known to occur within 5 km of the site
- a list of commercially or recreationally important vertebrate animals known to occur within 5 km of the site.
- estimates of the relative abundance of both commercially and recreationally important game and nongame vertebrates
- a list of all endangered species at or within 5 km of the site

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of former burials at the site. The staff will review site information provided by the licensee or responsible party in both the decommissioning plan and Environmental Report (ER), if an ER was submitted. The staff will review for completeness of information on biotic features in the decommissioning plan based on information provided by the licensee or responsible party, information acquired during site visits, and consultation with appropriate local, State, and Federal agencies, including the U.S. Fish and Wildlife Service and the director of the State fish and wildlife agency. The staff will assess the probable effect of the decommissioning alternative chosen by the licensee or responsible party on these species.

Sample Evaluation Findings

None.

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 3-5 paragraphs summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 4.0 RADIOLOGICAL STATUS OF FACILITY

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 4.0 RADIOLOGICAL STATUS OF FACILITY

RESPONSIBILITY FOR REVIEW

<u>Primary:</u>	NMSS:	Division of Waste Management - Decommissioning Branch
		Division of Fuel Cycle Safety and Safeguards - Licensing Branch
	Region I:	Division of Nuclear Materials Safety - Decommissioning and Laboratory Branch
	Region II:	Division of Nuclear Materials Safety - Materials Licensing/Inspection Branch 1
	Region III:	Division of Nuclear Material Safety - Decommissioning Branch
	Region IV:	Division of Nuclear Material Safety - Nuclear Materials Licensing Branch, Fuel Cycle and Decommissioning Branch
<u>Secondary:</u>	None	
<u>Support:</u>	None	

AREAS OF REVIEW

The staff will review the information supplied by the licensee or responsible party to determine if the description of the current radiological status of the facility is adequate to allow the staff to fully understand the types and levels of radioactive material contamination and the extent of radioactive material contamination at the facility. This information will be used by the staff during their review of the licensee's or responsible party's decommissioning activities, to evaluate the cost estimates for decommissioning, and decommissioning health and safety plans. This information should include summaries of the types and extent of radionuclide contamination in all media at the facility including buildings, systems and equipment, surface and subsurface soil, as well as surface and groundwater. Information presented in this section of the SRP should be developed based on the methodologies and procedures described in Section 14 of this SRP (Facility Radiation Surveys). Information describing how the licensee or responsible party developed the information presented in this section should be presented in the Radiation Surveys section of the decommissioning plan. If the licensee or responsible party combines the description of how the radiological status of the facility was determined with the results of the evaluation, NRC staff shall evaluate the licensee's methodology using the appropriate sections of Section 14 of this SRP.

REVIEW PROCEDURES

Acceptance Review

The staff will review the decommissioning plan to ensure that, at a minimum, the decommissioning plan contains the information summarized under "Areas of Review," above. Staff will review the radiological status portion of the decommissioning plan without assessing the technical accuracy or completeness of the information. The adequacy of the information will be assessed during the detailed technical review. Staff will review the decommissioning plan table of contents and the individual descriptions under "Areas of Review," above, to ensure that the licensee or responsible party has included this information in the decommissioning plan and to determine if the level of detail of the information appears to be adequate for the staff to perform a detailed technical review.

Safety Evaluation

The material to be reviewed is informational in nature, and no specific detailed technical analysis is required. The staff will verify that the licensee or responsible party has summarized the radiological status of all buildings and equipment, surface and subsurface soil, and ground and surface water at the site.

4.1 CONTAMINATED STRUCTURES

The purpose of the review of the description of the contaminated structures is to evaluate whether the licensee has fully described the types and activity of radioactive material contamination in the structures, as well as the extent of this contamination. This information

should be sufficient to allow the NRC staff to evaluate the potential safety issues associated with remediating the structures, whether the remediation activities and radiation control measures proposed by the licensee or responsible party (described in Sections 8 and 10 of this SRP) are appropriate for the type of radioactive material present in the structure, whether the licensee's or responsible party's waste management practices are appropriate and whether the licensee's or responsible party's cost estimates are plausible, given the amount of contaminated material that will need to be removed or remediated.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 10 CFR 40.42(g)(4)(i), 10 CFR 70.38(g)(4)(i)(i), 10 CFR 72.54(g)1

Regulatory Guidance

Draft Branch Technical Position on Site Characterization for Decommissioning
NUREG-1575 - Multi-Agency Radiological Survey and Site Investigation Manual
NUREG 1754 - Technology, Safety and Costs of Decommissioning Reference Non-Fuel Cycle Nuclear Facilities, Addendum 1

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand the types and activity of radioactive material contamination in the structure, as well as the extent of this contamination. The staff's review should verify that the following information is included in the contaminated structures section of the facility decommissioning plan:

- a list or description of all structures at the facility where licensed activities occurred that contain residual radioactive material in excess of site background levels;
- a summary of the structures and locations at the facility that the licensee or responsible party has concluded have not been impacted by licensed operations and the rationale for the conclusion;
- a list or description of each room or work area within each of these structures;
- a summary of the background levels used during scoping or characterization surveys;
- a summary of the locations of contamination (i.e., walls, floors, wall/floor joints, structural steel surfaces, ceilings, etc.) in each room or work area
- a summary of the radionuclides present at each location, the maximum and average radionuclide activities in dpm/100cm², and, if multiple radionuclides are present, the radionuclide ratios;
- the mode of contamination for each surface (i.e., whether the radioactive material is present only on the surface of the material or if it has penetrated the material);
- the maximum and average radiation levels in mrem/hr in each room or work area; and
- a scale drawing or map of the rooms or work areas showing the locations of radionuclide material contamination.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements," above, is included in the licensee's description of the contaminated structures. The staff's review should verify that the licensee has fully described the types and activity of radioactive material contamination in facility structures, as well as the extent of this contamination. These descriptions should be sufficient to allow the NRC staff to evaluate the potential safety issues associated with remediating the structures, whether the remediation activities and radiation control measures proposed by the licensee or responsible party are appropriate for the type of radioactive material present in the structures, whether the licensee's or responsible party's waste management practices are appropriate, and whether the licensee's or responsible party's cost estimates are plausible, given the amount of contaminated material that will need to be removed or remediated.

Sample Evaluation Findings

The staff may combine the evaluation finding for the licensee's or responsible party's description of contaminated structures with the findings for the remaining areas in this section of the SRP as follows:

The NRC staff has reviewed the information in the Radiological Status section of the Decommissioning Plan for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 4 (Radiological Status of Facility). Based on this review, the NRC staff has determined that the licensee [insert name] has described the types and activity of radioactive material contamination at its facility sufficiently to allow the NRC staff to evaluate the potential safety issues associated with remediating the facility, whether the remediation activities and radiation control measures proposed by the licensee or responsible party are appropriate for the type of radioactive material present at the facility, whether the licensee's or responsible party's waste management practices are appropriate, and whether the licensee's or responsible party's cost estimates are plausible, given the amount of contaminated material that will need to be removed or remediated.

SUGGESTED FORMAT

1. Length: not to exceed 3 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. The information may be summarized in narrative format. However, licensees should be encouraged to present the material in tabular format to the maximum extent possible. Licensees are also encouraged to submit the information in electronic format.

4.2 CONTAMINATED SYSTEMS AND EQUIPMENT

The purpose of the review of the description of the contaminated systems and equipment at the facility is to evaluate whether the licensee has fully described the types and activity of radioactive material contamination in facility systems or on equipment, as well as the extent of this contamination. This information should be sufficient to allow the NRC staff to evaluate the potential safety issues associated with remediating the systems or equipment, whether the remediation activities and radiation control measures proposed by the licensee or responsible party (described in Sections 8 and 10 of this SRP) are appropriate for the type of radioactive material present in the systems or equipment, whether the licensee's or responsible party's waste management practices are appropriate and whether the licensee's or responsible party's cost estimates are plausible, given the amount of contaminated material that will need to be removed or remediated.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 10 CFR 40.42(g)(4)(i), 10 CFR 70.38(g)(4)(i), 10 CFR 72.54(g)1

Regulatory Guidance

Draft Branch Technical Position on Site Characterization for Decommissioning
NUREG-1575 - Multi-Agency Radiological Survey and Site Investigation Manual
NUREG 1754 - Technology, Safety and Costs of Decommissioning Reference Non-Fuel Cycle Nuclear Facilities, Addendum 1

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand the types and activity of radioactive material contamination present in systems or on equipment, as well as the extent of this contamination. The staff's review should verify that the following information is included in the contaminated systems and equipment section of the facility decommissioning plan:

- a list or description and the location of all systems or equipment at the facility that contain residual radioactive material in excess of site background levels;
- a summary of the radionuclides present in each systems or on the equipment at each location, the maximum and average radionuclide activities in dpm/100cm², and, if multiple radionuclides are present, the radionuclide ratios;
- the maximum and average radiation levels in mrem/hr at the surface of each piece of equipment;
- a summary of the background levels used during scoping or characterization surveys; and,
- a scale drawing or map of the rooms or work areas showing the locations of the contaminated systems or equipment;

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements," above is included in the licensee's description of the contaminated systems or equipment. The staff's review should verify that the licensee has fully described the types and activity of radioactive material contamination in the facility systems or on equipment, as well as the extent of this contamination. These descriptions should be sufficient to allow the NRC staff to evaluate the potential safety issues associated with remediating the systems or equipment, whether the remediation activities and radiation control measures proposed by the licensee or responsible party are appropriate for the type of radioactive material present in the systems or equipment, whether the licensee's or responsible party's waste management practices are appropriate and whether the licensee's or responsible party's cost estimates are plausible, given the amount of contaminated material that will need to be removed or remediated.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of contaminated systems or equipment with the findings for the remaining areas in this section of the SRP (see Section 4.1, above)

SUGGESTED FORMAT

1. Length: not to exceed 3 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. The information may be summarized in narrative format. However, licensees should be encouraged to present the material in tabular format to the maximum extent possible. Licensees are also encouraged to submit the information in electronic format.

4.3 SURFACE SOIL CONTAMINATION

The purpose of the review of the description of surface soil (i.e., soil within the top 15 cm of the soil column) contamination is to determine if the licensee has fully described the types and activity of radioactive material contamination in the surface soil, as well as the extent of this contamination. This information should be sufficient to allow the NRC staff to evaluate the potential safety issues associated with remediating the surface soil, whether the remediation activities and radiation control measures proposed by the licensee or responsible party (described in Sections 8 and 10 of this SRP) are appropriate for the type of radioactive material present in the surface soil, whether the licensee's or responsible party's waste management practices are appropriate and whether the licensee's or responsible party's cost estimates are plausible, given the amount of contaminated soil that will need to be removed or remediated.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 10 CFR 40.42(g)(4)(i), 10 CFR 70.38(g)(4)(i), 10 CFR 72.54(g)1

Regulatory Guidance

Draft Branch Technical Position on Site Characterization for Decommissioning
 NUREG-1575 - Multi-Agency Radiological Survey and Site Investigation Manual
 NUREG 1754 - Technology, Safety and Costs of Decommissioning Reference Non-Fuel Cycle
 Nuclear Facilities, Addendum 1

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand the types and activity of radioactive material in surface soil, as well as the extent of this contamination. The staff's review should verify that the following information is included in the description of contaminated surface soil in the facility decommissioning plan:

- a list or description of all locations at the facility where surface soil contains residual radioactive material in excess of site background levels;
- a summary of the background levels used during scoping or characterization surveys
- a summary of the radionuclides present at each location, the maximum and average radionuclide activities in pCi/gm, and, if multiple radionuclides are present, the radionuclide ratios;
- the maximum and average radiation levels in mrem/hr at each location; and
- a scale drawing or map of the site showing the locations of radionuclide material contamination in surface soil;

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements," above is included in the licensee's description of the surface soil contamination at the facility. The staff's review should verify that the licensee has fully described the types and activity of radioactive material contamination in the surface soil at the facility, as well as the extent of this contamination. These descriptions should be sufficient to allow the NRC staff to evaluate the potential safety issues associated with remediating the soil, whether the remediation activities and radiation control measures proposed by the licensee or responsible party are appropriate for the type of radioactive material present in the soil, whether the licensee's or responsible party's waste management practices are appropriate and whether the licensee's or responsible party's cost estimates are plausible, given the amount of contaminated material that will need to be removed or remediated.

Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of surface soil contamination with the findings for the remaining areas in this section of the SRP (see Section 4.1, above).

SUGGESTED FORMAT

1. Length: not to exceed 3 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. The information may be summarized in narrative format. However, licensees should be encouraged to present the material in tabular format to the maximum extent possible. Licensees are also encouraged to submit the information in electronic format.

4.4 SUBSURFACE SOIL CONTAMINATION

The purpose of the review of the description of subsurface soil (i.e., soil below the top 15 cm of soil in the soil column) contamination is to determine if the licensee has fully described the types and activity of radioactive material contamination in the subsurface soil, as well as the extent of this contamination. This information should be sufficient to allow the NRC staff to evaluate the potential safety issues associated with remediating the subsurface soil, whether the remediation activities and radiation control measures proposed by the licensee or responsible party (described in Sections 8 and 10 of this SRP) are appropriate for the type of radioactive material present in the subsurface soil, whether the licensee's or responsible party's waste management practices are appropriate and whether the licensee's or responsible party's cost estimates are plausible, given the amount of contaminated soil that will need to be removed or remediated.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 10 CFR 40.42(g)(4)(i), 10 CFR 70.38(g)(4)(i), 10 CFR 72.54(g)1

Regulatory Guidance

Draft Branch Technical Position on Site Characterization for Decommissioning
 NUREG-1575 - Multi-Agency Radiological Survey and Site Investigation Manual
 NUREG 1754 - Technology, Safety and Costs of Decommissioning Reference Non-Fuel Cycle Nuclear Facilities, Addendum 1

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand the types and activity of radioactive material in subsurface soil, as well as the extent of this contamination. The staff's review should verify that the following information is included in the description of contaminated subsurface soil in the facility decommissioning plan:

- a list or description of all locations at the facility where subsurface soil contains residual radioactive material in excess of site background levels;
- a summary of the background levels used during scoping or characterization surveys
- a summary of the radionuclides present at each location, the maximum and average radionuclide activities in pCi/gm, and, if multiple radionuclides are present, the radionuclide ratios;
- the depth of the subsurface soil contamination at each location; and
- a scale drawing or map of the site showing the locations of subsurface soil contamination.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements," above is included in the licensee's description of the subsurface soil contamination at the facility. The staff's review should verify that the licensee has fully described the types and activity of radioactive material contamination in the subsurface soil at the facility, as well as the extent of this contamination. These descriptions should be sufficient to allow the NRC staff to evaluate the potential safety issues associated with remediating the subsurface soil, whether the remediation activities and radiation control measures proposed by the licensee or responsible party are appropriate for the type of radioactive material present in the subsurface soil, whether the licensee's or responsible party's waste management practices are appropriate and whether the licensee's or responsible party's cost estimates are plausible, given the amount of contaminated material that will need to be removed or remediated.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of subsurface soil contamination with the findings for the remaining areas in this section of the SRP (see Section 4.1, above).

SUGGESTED FORMAT

1. Length: not to exceed 3 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.

3. The information may be summarized in narrative format. However, licensees should be encouraged to present the material in tabular format to the maximum extent possible. Licensees are also encouraged to submit the information in electronic format.

4.5 SURFACE WATER

The purpose of the review of the description of contaminated surface water is to evaluate whether the licensee has fully described the types and activity of radioactive material present in surface water bodies at the facility, as well as the extent of this contamination. This information should be sufficient to allow the NRC staff to evaluate potential safety issues associated with remediating the surface water, whether the remediation activities and radiation control measures proposed by the licensee or responsible party (described in Sections 8 and 10 of this SRP) are appropriate for the type of radioactive material present in the surface water, whether the licensee's or responsible party's waste management practices are appropriate and whether the licensee's or responsible party's cost estimates are plausible, given the amount of contaminated water that will need to be removed or remediated.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 10 CFR 40.42(g)(4)(i), 10 CFR 70.38(g)(4)(i), 10 CFR 72.54(g)1

Regulatory Guidance

Draft Branch Technical Position on Site Characterization for Decommissioning
NUREG-1575 - Multi-Agency Radiological Survey and Site Investigation Manual

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand the types and activity of radioactive material contamination in surface water at the facility, as well as the extent of this contamination. The staff's review should verify that the following information is included in the description of surface water contamination in the decommissioning plan:

- a list or description of all surface water bodies at the facility that contain residual radioactive material in excess of site background levels;
- a summary of the background levels used during scoping or characterization surveys
- a summary of the radionuclides present in each surface water body and the maximum and average radionuclide activities in pCi/l.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements," above, is included in the licensee's description of the surface water contamination at the site. The staff's review should verify that the licensee has fully described the types and activity of radioactive material contamination in the surface water at the site, as well as the extent of this contamination. These descriptions should be sufficient to allow the NRC staff to evaluate potential safety issues associated with remediating the surface water, whether the remediation activities and radiation control measures proposed by the licensee or responsible party are appropriate for the type of radioactive material present in the water, whether the licensee's or responsible party's waste management practices are appropriate and whether the licensee's or responsible party's cost estimates are plausible, given the amount of contaminated material that will need to be removed or remediated.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of contaminated surface water with the findings for the remaining areas in this section of the SRP. (See section 4.1, above).

SUGGESTED FORMAT

1. Length: not to exceed 2 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. The information may be summarized in narrative format. However, licensees should be encouraged to present the material in tabular format to the maximum extent possible. Licensees are also encouraged to submit the information in electronic format.

4.6 GROUNDWATER

The purpose of the review of the description of contaminated groundwater is to evaluate whether the licensee has fully described the types and activity of radioactive material present in groundwater at the facility, as well as the extent of this contamination. This information should be sufficient to allow the NRC staff to evaluate potential safety issues associated with remediating the groundwater, whether the remediation activities and radiation control measures proposed by the licensee or responsible party (described in Sections 8 and 10 of this SRP) are appropriate for the type of radioactive material present in the groundwater, whether the licensee's or responsible party's waste management practices are appropriate and whether the licensee's or responsible party's cost estimates are plausible, given the amount of contaminated water that will need to be removed or remediated.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 10 CFR 40.42(g)(4)(i), 10 CFR 70.38(g)(4)(i), 10 CFR 72.54(g)1

Regulatory Guidance

Draft Branch Technical Position on Site Characterization for Decommissioning
 NUREG-1575 - Multi-Agency Radiological Survey and Site Investigation Manual
 NUREG 1754 - Technology, Safety and Costs of Decommissioning Reference Non-Fuel Cycle
 Nuclear Facilities, Addendum 1

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand the types and activity of radioactive material contamination in groundwater at the facility, as well as the extent of this contamination. The staff's review should verify that the following information is included in the description of groundwater contamination in the decommissioning plan:

- a summary of the aquifer(s) at the facility that contain residual radioactive material in excess of site background levels;
- a summary of the background levels used during scoping or characterization surveys
- a summary of the radionuclides present in each aquifer and the maximum and average radionuclide activities in pCi/l

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements," above, is included in the licensee's description of the groundwater contamination at the site. The staff's review should verify that the licensee has fully described the types and activity of radioactive material contamination in the groundwater at the site, as well as the extent of this contamination. These descriptions should be sufficient to allow the NRC staff to evaluate the potential safety issues associated with remediating the groundwater, whether the remediation activities and radiation control measures proposed by the licensee or responsible party are appropriate for the type of radioactive material present in the groundwater, whether the licensee's or responsible party's waste management practices are appropriate and whether the licensee's or responsible party's cost estimates are plausible, given the amount of contaminated material that will need to be removed or remediated.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of contaminated groundwater with the findings for the remaining areas in this section of the SRP. (See section 4.1)

SUGGESTED FORMAT

1. Length: not to exceed 3 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. The information may be summarized in narrative format. However, licensees should be encouraged to present the material in tabular format to the maximum extent possible. Licensees are also encouraged to submit the information in electronic format.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 5.0 DOSE MODELING FOR DECOMMISSIONING

**NRC STAFF IS CURRENTLY COMPLETING DEVELOPMENT OF THIS MODULE.
WHEN COMPLETED, IT WILL BE POSTED ON THE WORLD WIDE WEB AT:**

http://techconf.llnl.gov/cgi-bin/library?source=*&library=Lic_Term_lib&file=*

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 6.0 ALTERNATIVES CONSIDERED AND RATIONALE FOR CHOSEN ALTERNATIVE

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 6.0 ALTERNATIVES CONSIDERED AND RATIONALE FOR CHOSEN ALTERNATIVE

RESPONSIBILITY FOR REVIEW

<u>Primary:</u>	NMSS:	Division of Waste Management - Decommissioning Branch Division of Fuel Cycle Safety and Safeguards - Licensing Branch
	Region I:	Division of Nuclear Materials Safety - Decommissioning and Laboratory Branch
	Region II:	Division of Nuclear Materials Safety - Materials Licensing/Inspection Branch 1
	Region III:	Division of Nuclear Material Safety - Decommissioning Branch
	Region IV:	Division of Nuclear Material Safety - Nuclear Materials Licensing Branch, Fuel Cycle and Decommissioning Branch
<u>Secondary:</u>	None	
<u>Support:</u>	Office of General Counsel	

NOTE TO DECOMMISSIONING PLAN REVIEWERS:

THE GUIDANCE IN THIS SECTION OF THE SRP APPLIES ONLY TO LICENSEES APPLYING FOR LICENSE TERMINATION UNDER 10 CFR 20.1403 (RESTRICTED USE) OR 10 CFR 20.1404 (ALTERNATE CRITERIA). THE INFORMATION WILL BE USED BY NRC STAFF TO SUPPORT THE DEVELOPMENT OF AN ENVIRONMENTAL ASSESSMENT OR ENVIRONMENTAL IMPACT STATEMENT. LICENSEES APPLYING FOR LICENSE TERMINATION PURSUANT TO 10 CFR 20.1402 (UNRESTRICTED USE) DO NOT NEED TO SUPPLY THIS INFORMATION

AREAS OF REVIEW

The staff will review the information supplied by the licensee or responsible party to determine if the licensee has identified and adequately evaluated all reasonable alternatives that could accomplish the decommissioning objective(s) identified in the decommissioning plan. Information submitted should include descriptions of all reasonable decommissioning alternatives evaluated by the licensee; the impacts of each alternative; the environmental, economic, and or societal advantages and disadvantages of each alternative; and, the licensee's rationale for selecting the preferred alternative described in the decommissioning plan.

REVIEW PROCEDURESAcceptance Review

The staff will review the decommissioning plan to ensure that, at a minimum, the decommissioning plan contains the information summarized under "Areas of Review," above. Staff will review the evaluation of decommissioning alternatives in the decommissioning plan without assessing the technical accuracy or completeness of the information. The adequacy of the information will be assessed during the detailed technical review. Staff will review the decommissioning plan table of contents and the individual descriptions under "Areas of Review," above, to ensure that the licensee or responsible party has included this information in the decommissioning plan and to determine if the level of detail of the information appears to be adequate for the staff to perform a detailed technical review.

Safety Evaluation

The material to be reviewed is informational in nature, and no specific detailed technical analysis is required. The staff will verify that the licensee has identified all reasonable alternatives that could accomplish the decommissioning objective(s). The staff will make a qualitative assessment as to whether the licensee's or responsible party's descriptions of the alternatives are complete and adequate. Typically, NRC staff practice and guidance in the past

has been to rely on the environmentally superior¹ alternative in selecting the preferred alternative for decommissioning actions. As such, the staff should ensure that the environmentally superior alternative is evaluated by the licensee in the decommissioning plan.

6.1 ALTERNATIVES CONSIDERED

The purpose of the review of the description of decommissioning alternatives other than that proposed by the licensee in the decommissioning plan is to ensure that the alternative proposed by the licensee is the environmentally superior alternative.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 51.45

Regulatory Guidance

Counsel on Environmental Quality (CEQ) 40 Most Asked Questions About the National Environmental Policy Act (NEPA)

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand what impacts result from each alternative identified by the licensee. The staff should verify that the following information is included in the discussion of each alternative, including the licensee's proposed alternative:

- a description of the facility if the alternative is employed;
- a summary of the health effects to adjacent communities if the alternative is employed;
- a summary of the impacts on community resources such as land use and property values;
- a summary of the impacts on the geology, hydrology, air quality and ecology in and around the site;
- a description of impacts to minority or low-income populations within a 0.6 mile radius of the center of the facility (urban location) or within a 4 mile radius of the center of the facility (rural location);
- if appropriate, an assessment of the potential for criticality;
- a summary of the irreversible and irretrievable commitment of resources.
- an analysis of the proposed alternative and other alternatives as required by 10 CFR 51.45(c);

¹ In this context "environmentally superior" is defined as the alternative that, if selected, results in the lowest doses to the public at the completion of decommissioning and the returns the site to as close to a pre-licensing condition as possible

- a list of the permits, licenses, approvals, and other entitlements and the discussion of the status of compliance with these requirements required in 10 CFR 51.45(d)

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's evaluation of alternatives to the proposed decommissioning alternative. NRC regulations at 10 CFR Part 51 require that all reasonable alternatives will be identified. An otherwise reasonable alternative will not be excluded from discussion solely on the ground that it is not within the jurisdiction of the NRC (Appendix A to Subpart A, item 5).

Reasonable alternatives include those that are practical or feasible from a common sense, technical, or economic standpoint, rather than simply being desirable from the standpoint of the applicant (CEQ's 40 Most Asked Questions, 2a). In fact, an alternative that is outside the legal jurisdiction of the NRC must still be analyzed if it is reasonable (CEQ's 40 Most Asked Questions, 2b). A potential conflict with local, State, tribal, or Federal law does not necessarily render an alternative unreasonable, although such conflicts must be considered and discussed. For instance, a local law that prohibits on-site disposal of radioactive waste might conflict with the licensee's proposal, but that conflict would not be a sufficient basis to conclude that on-site disposal is not reasonable and that the alternative should not be considered in detail.

Alternatively, the fact that NRC regulations prohibit an alternative is not a sufficient reason to consider it an unreasonable alternative if it would have environmental advantages and would be technically feasible.

Many conceivable alternatives are not considered to be reasonable. Alternatives that offer no potential environmental or other advantage (e.g., cost savings) need not be considered. Other alternatives may have potential advantages, but the alternative may not be reasonable if the advantages are not sufficient to compensate for the alternative's adverse aspects. For instance, an alternative of excavating buried wastes, sorting it to place the most radioactive wastes on the bottom, and reburying the remaining waste could reduce the potential dose to an intruder, but at considerable expense and relatively high doses to workers. In addition, many minor variations of alternatives can be invented. Unless these variations exhibit appreciably different impacts, they should not be analyzed as separate alternatives. While the full spectrum of reasonable alternatives must be identified and evaluated, alternatives that are only minor variations of other alternatives are more likely to confuse the decision maker than to help clarify the decision.

Sample Evaluation Findings

The NRC staff has reviewed the information in the evaluation of the Decommissioning Alternatives in the Decommissioning Plan for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 6 (Alternatives Considered and Rationale for Chosen Alternative). Based on this

review, the NRC staff has determined that the licensee [insert name] has adequately described the impacts of all reasonable alternatives to the decommissioning alternative described in the decommissioning plan.

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. Licensees should be encouraged to present the information on all alternatives in a comparative format. Licensees are also encouraged to submit the information in electronic format.

6.2 RATIONALE FOR CHOSEN ALTERNATIVE

The purpose of the review of the license's rationale for which alternative to employ at the site is to ensure that the rationale is based on reducing potential exposure to radiation at the facility to those that are as low as reasonably achievable as required in NRC regulations at 10 CFR Part 20.

Regulatory Requirements

None

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand why the licensee selected the preferred alternative described in the decommissioning plan. In addition, if the licensee has not selected the environmentally superior alternative the licensee must fully explain why this alternative was not selected.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the licensee has compared the impacts of each reasonable decommissioning alternative as described above, including the environmentally superior alternative.

Sample Evaluation Findings

The NRC staff has reviewed the rationale for selecting the decommissioning alternative in the Decommissioning Plan for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 6 (Alternatives Considered and Rationale for Chosen Alternative). Based on this review, the NRC staff has determined that the licensee [insert name] has adequately evaluated the impacts of all reasonable decommissioning alternatives.

SUGGESTED FORMAT

1. Length: not to exceed 2 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

**STANDARD REVIEW PLAN 7.0
SUBPART E ALARA REQUIREMENTS**

**NRC STAFF IS CURRENTLY COMPLETING DEVELOPMENT OF THIS MODULE.
WHEN COMPLETED, IT WILL BE POSTED ON THE WORLD WIDE WEB AT:**

[http://techconf.llnl.gov/cgi-bin/library?source=*&library=Lic_Term_lib&file=*](http://techconf.llnl.gov/cgi-bin/library?source=*&library=Lic_Term_lib&file=)

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 8.0 PLANNED DECOMMISSIONING ACTIVITIES

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 8.0 PLANNED DECOMMISSIONING ACTIVITIES

RESPONSIBILITY FOR REVIEW

<u>Primary:</u>	NMSS:	Division of Waste Management - Decommissioning Branch Division of Fuel Cycle Safety and Safeguards - Licensing Branch
	Region I:	Division of Nuclear Materials Safety - Decommissioning and Laboratory Branch
	Region II:	Division of Nuclear Materials Safety - Materials Licensing/Inspection Branch 1
	Region III:	Division of Nuclear Material Safety - Decommissioning Branch
	Region IV:	Division of Nuclear Material Safety - Nuclear Materials Licensing Branch, Fuel Cycle and Decommissioning Branch
<u>Secondary:</u>	None	
<u>Support:</u>	None	

AREAS OF REVIEW

The staff will review the information supplied by the licensee or responsible party to determine if the description of the planned decommissioning activities is adequate to allow the staff to fully

understand the methods and procedures the licensee or responsible party intends to use to remove residual radioactive material at the site to levels that allow for release of the site in accordance with NRC requirements. This information should include descriptions of how the licensee or responsible party intends to remediate structures, systems and equipment, surface and subsurface soil, and surface and groundwater at the site. In addition, the licensee or responsible party should provide a schedule that demonstrates how the licensee will complete the interrelated decommissioning activities and the timeframes for completing the decommissioning. The licensee or responsible party should also summarize which activities are being performed by licensee or responsible party staff and those being performed by decommissioning contractors, including which activities are being performed under the licensee's license and which are being performed under the contractor's license.

REVIEW PROCEDURES

Acceptance Review

The staff will ensure that the decommissioning plan contains the information summarized under "Areas of Review," above. Staff will review the planned decommissioning activities portion of the decommissioning plan without assessing the technical accuracy or completeness of the information contained therein. The adequacy of this information will be assessed during the detailed technical review. Staff will review the decommissioning plan table of contents and the individual descriptions under "Areas of Review," above, to ensure that the licensee or responsible party has included this information in the decommissioning plan and to determine if the level of detail of the information appears to be adequate for the staff to perform a detailed technical review.

Safety Evaluation

The material to be reviewed is informational in nature, and no specific detailed technical analysis is required. The staff will make a qualitative assessment as to whether the licensee's or responsible party's descriptions of planned decommissioning activities are adequate to serve as the basis for evaluating the licensee's or responsible party's methods and procedures for remediating the site and whether the decommissioning activities proposed by the licensee to remediate the facility can be conducted safely. In addition, the staff will ensure that the licensee's or responsible party's proposed schedule for completing the decommissioning complies with the NRC's requirements under 10 CFR 30.36(h), 10 CFR 40.42(h), 70.38(h) or 72.54(j). Finally, the staff will ensure that the licensee and contractor are already authorized to perform the decommissioning procedures described in the decommissioning plan or that the licensee has described the decommissioning procedures sufficiently to allow the staff to incorporate them into the license.

8.1 CONTAMINATED STRUCTURES

The purpose of the review of the description of the planned decommissioning activities for contaminated structures is to allow the staff to fully understand what methods and procedures

the licensee or responsible party will undertake to remediate the contaminated structure. This will enable the staff to evaluate the licensee's methods and procedures to qualitatively assess if they can be performed safely and in compliance with NRC's requirements. This information may also aid the staff in evaluating the estimates of radioactive waste that will be generated during decommissioning, the cost estimates for the decommissioning, and the ALARA evaluations developed by the licensee or responsible party to support the decommissioning.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g), 10 CFR 40.42(g), 70.38(g), 72.54(g)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand what methods, procedures, and techniques the licensee or responsible party intends to use to remediate the contaminated structure. In addition, the information should be sufficient to allow the staff to determine if the licensee's or responsible party's radiation safety procedures are appropriate, given the level of contamination and proposed method(s) for remediation. The staff's review should verify that the following information is included in the authorized activities section of the facility decommissioning plan:

- a summary of the remediation tasks planned for each room or area in the contaminated structure in the order in which they will occur including which activities will be conducted by licensee staff and which will be performed by a contractor;
- a brief summary of the radionuclides, maximum activities of radionuclides and radiation levels in each area or room of the contaminated structure;
- a description of the remediation techniques¹ (such as scabbling, hydrolazing or grit blasting) that will be employed in each room or area of the contaminated structure;
- a summary of the radiation protection methods (such as PPE, step-off pads and exit monitoring) and control procedures (such as scabbler shrouds, HEPA vented enclosures or superfine water misting) that will be employed in each room or area²;

¹Licensees or responsible party's may generically describe these techniques once at the beginning of the contaminated structures section and refer to them in the descriptions of the remediation of the individual rooms or areas

²The staff's technical review of the adequacy of the licensee's or responsible party's radiation safety procedures should be performed pursuant to the criteria in Section 10 of this SRP. In this section of the SRP the staff should make a qualitative assessment of the adequacy of the radiation protection and control methods proposed by the licensee or responsible party to determine if the procedures described in the Health and Safety section of the decommissioning plan have been followed.

- a summary of the procedures already authorized under the existing license and those for which approval is being requested in the decommissioning plan;
- a commitment to conduct decommissioning activities in accordance with written, approved procedures; and,
- a summary of any unique safety or remediation issues associated with remediating the room or area.

If the licensee or responsible party intends to dismantle structures with contamination present in excess of the unrestricted use limits, the decommissioning plan should provide a separate summary of the information listed above for the areas containing contamination in excess of the unrestricted use limits. In addition, the licensee or responsible party should provide a description of the techniques and procedures that will be used to dismantle the building or structure and the licensee's or responsible party's procedures for evaluating the areas prior to dismantlement.

EVALUATION FINDINGS

Evaluation Criteria

The staff's review should verify that the licensee or responsible party has described the remediation activities and associated safety precautions in sufficient detail to allow the staff to make a qualitative assessment of the adequacy of the proposed activities with respect to safety in compliance with NRC requirements. The staff should verify that the information summarized under "Information Requirements", above, is included in the licensee's description of the decommissioning activities portion of the decommissioning plan. The staff should make a qualitative assessment of the adequacy of the licensee's or responsible party's proposed remediation methods and procedures to accomplish the remediation objectives in a manner that is protective of workers and the public and in compliance with NRC requirements. Detailed technical review of the safety precautions and procedures should be conducted pursuant to the criteria in Section 10 "Health and Safety Program" of this SRP.

Sample Evaluation Findings

The staff may combine the evaluation finding for the licensee's or responsible party's description of the planned decommissioning activities with the findings for the remaining areas in this section of the SRP as follows:

The NRC staff has reviewed the decommissioning activities described in the Decommissioning Plan for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 8 (Planned Decommissioning Activities). Based on this review the NRC staff has determined that the licensee [insert name] has provided sufficient information to allow the NRC staff to evaluate the licensee's planned decommissioning activities to ensure that the decommissioning can be conducted in accordance with NRC requirements.

SUGGESTED FORMAT

1. Length: to be commensurate with the number of rooms or areas requiring remediation
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. Bullet 1 under Acceptance Criteria, above should be no more than 1 or 2 pages outlining the tasks in tabular form. Bullet 2 should be 1 or 2 sentences for each room or area. Up to 3 paragraphs summarizing the information requested under bullets 3 and 4. Bullets 5 and 6 should be 1 or 2 sentences. Bullet 7 should be no more than 1 paragraph in length. Licensees are also encouraged to submit the information in electronic format.

8.2 CONTAMINATED SYSTEMS AND EQUIPMENT

The purpose of the review of the description of the planned decommissioning activities for contaminated systems and equipment is to allow the staff to fully understand what methods and procedures the licensee or responsible party will undertake to remediate the contaminated systems or equipment at its facility. This will enable the staff to evaluate the licensee's methods and procedures to qualitatively assess if they can be performed safely and in compliance with NRC's requirements. This information may also aid the staff in evaluating the estimates of radioactive waste that will be generated during decommissioning, the cost estimates for the decommissioning, and the ALARA evaluations developed by the licensee or responsible party to support the decommissioning.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g), 10 CFR 40.42(g), 70.38(g),

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand what methods, procedures, and techniques the licensee or responsible party intends to use to remediate the contaminated systems and equipment. In addition, the information should be sufficient to allow the staff to determine if the licensee's or responsible party's radiation safety procedures are appropriate, given the level of contamination and proposed method(s) for remediation. The staff's review should verify that the following information is included in the authorized activities section of the facility decommissioning plan:

- a summary of the remediation tasks planned for each system in the order in which they will occur including which activities will be conducted by licensee staff and which will be performed by a contractor;
- a brief summary of the radionuclides, maximum activities of radionuclides and radiation levels present in or on each system;
- a description of the techniques³ (such as scabbling, hydrolazing or grit blasting) that will be employed to remediate each system in the facility or site;
- a description of the radiation protection methods (such as PPE, step-off pads and exit monitoring) and control procedures (such as scabbler shrouds, HEPA vented enclosures or superfine water misting) that will be employed while remediating each system⁴;
- a summary of the equipment will be removed or decontaminated and how the decontamination will be accomplished;
- a summary of the procedures already authorized under the existing license and those for which approval is being requested in the decommissioning plan;
- a commitment to conduct decommissioning activities in accordance with written, approved procedures; and,
- a summary of any unique safety or remediation issues associated with remediating any system or piece of equipment.

EVALUATION FINDINGS

Evaluation Criteria

The staff's review should verify that the licensee or responsible party has described the remediation activities and associated safety precautions in sufficient detail to allow the staff to determine if the proposed activities can be conducted safely and in compliance with NRC requirements. The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the decommissioning activities portion of the decommissioning plan. The staff should make a qualitative assessment of the adequacy of the licensee's or responsible party's proposed remediation methods and procedures to accomplish the remediation objectives in a manner that is protective of workers and the public and in compliance with NRC requirements. Detailed technical review of the safety precautions and procedures should be conducted pursuant to the criteria in Section 10 "Health and Safety Program" of this SRP.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of decommissioning activities for contaminated systems and equipment with the findings for the remaining areas in this section of the SRP (see Section 8.1, above)

³Licensees or responsible party's may generically describe these techniques once at the beginning of the contaminated systems section and refer to them in the descriptions of the remediation of the individual systems

⁴See footnote 2

SUGGESTED FORMAT

1. Length: to be commensurate with the number of rooms or areas requiring remediation
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. Bullet 1 under Acceptance Criteria, above should be no more than 1 or 2 pages outlining the tasks in tabular form. Bullet 2 should be 1 or 2 sentences for each system. Up to 3 paragraphs summarizing bullets the information requested under 3 and 4. Bullet 5 should be a few pages and in tabular form. Bullets 6 and 7 should be 1 or 2 sentences. Bullet 8 should be no more than 1 paragraph in length. Licensees are also encouraged to submit the information in electronic format.

8.3 SOIL

The purpose of the review of the description of the planned decommissioning activities for soil is to allow the staff to fully understand what methods and procedures the licensee or responsible party will undertake to remove or remediate the surface and subsurface soil at the site. This will enable the staff to evaluate the licensee's methods and procedures to qualitatively assess if they can be performed safely and in compliance with NRC's requirements. This information may also aid the staff in evaluating the estimates of radioactive waste that will be generated during decommissioning, the cost estimates for the decommissioning, and the ALARA evaluations developed by the licensee or responsible party to support the decommissioning.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g), 10 CFR 40.42(g), 70.38(g),

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand what methods, procedures, and techniques the licensee or responsible party intends to use to remove or remediate contaminated soil at the site. In addition, the information should be sufficient to allow the staff to determine if the licensee's or responsible party's radiation safety procedures are appropriate, given the level of contamination in the soil and proposed method(s) for removal or remediation. The staff's review should verify that the following information is included in the description of soil decommissioning activities in the facility decommissioning plan:

- a summary of the removal/remediation tasks planned for surface and subsurface soil at the site in the order in which they will occur including which activities will be conducted by licensee staff and which will be performed by a contractor;
- a brief summary of the radionuclides, maximum activities of radionuclides and radiation levels present in the surface and subsurface soil;
- a description the techniques that will be employed to remove or remediate surface and subsurface soil at the site;
- a description of the radiation protection methods (such as PPE, or area exit monitoring) and control procedures (such as the use of HEPA vented enclosures during excavation or covering soil piles to prevent wind dispersion) that will be employed during soil removal/remediation⁵;
- a summary of the procedures already authorized under the existing license and those for which approval is being requested in the decommissioning plan;
- a commitment to conduct decommissioning activities in accordance with written, approved procedures; and,
- a summary of any unique safety or removal/remediation issues associated with remediating the soil.

EVALUATION FINDINGS

Evaluation Criteria

The staff's review should verify that the licensee or responsible party has described the remediation activities and associated safety precautions in sufficient detail to allow the staff to determine if the proposed activities can be conducted safely and in compliance with NRC requirements. The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the decommissioning activities portion of the decommissioning plan. The staff should make a qualitative assessment of the adequacy of the licensee's or responsible party's proposed remediation methods and procedures to accomplish the remediation objectives in a manner that is protective of workers and the public and in compliance with NRC requirements. Detailed technical review of the safety precautions and procedures should be conducted pursuant to the criteria in Section 10 "Health and Safety Program" of this SRP.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of decommissioning activities for soil with the findings for the remaining areas in this section of the SRP (see Section 8.1, above)

SUGGESTED FORMAT

1. Length: 5-10 pages

⁵See footnote 2

2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. Bullet 1 under Acceptance Criteria, above should be no more than 1 or 2 pages outlining the tasks in tabular form. Bullet 2 should be 1 or 2 sentences for each area. Up to 3 paragraphs summarizing the information requested under Bullets 3 and 4. Bullets 5 and 6 should be 1 or 2 sentences. Bullet 7 should be no more than 1 paragraph in length. Licensees are also encouraged to submit the information in electronic format.

8.4 SURFACE AND GROUNDWATER

The purpose of the review of the description of the planned decommissioning activities for surface and groundwater is to allow the staff to fully understand what methods and procedures the licensee or responsible party will undertake to remediate the contaminated water. This will enable the staff to evaluate the licensee's methods and procedures to qualitatively assess if they can be performed safely and in compliance with NRC's requirements. This information may also aid the staff in evaluating the estimates of radioactive waste that will be generated during decommissioning, the cost estimates for the decommissioning, and the ALARA evaluations developed by the licensee or responsible party to support the decommissioning.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g), 10 CFR 40.42(g), 70.38(g)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand what methods, procedures, and techniques the licensee or responsible party intends to use to remediate the contaminated ground or surface water. In addition, the information should be sufficient to allow the staff to determine if the licensee's or responsible party's radiation safety procedures are appropriate, given the level of contamination and proposed method(s) for remediation. The staff's review should verify that the following information is included in the authorized activities section of the facility decommissioning plan:

- a summary of the remediation tasks planned for ground and surface water in the order in which they will occur, including which activities will be conducted by licensee staff and which will be performed by a contractor;
- a brief summary of the radionuclides and maximum activities of radionuclides present in the ground and surface water;

- a description the remediation techniques that will be employed to remediate the ground or surface water;
- a description of the radiation protection methods and control procedures that will be employed during ground or surface water remediation⁶
- a summary of the procedures already authorized under the existing license and those for which approval is being requested in the decommissioning plan
- a commitment to conduct decommissioning activities in accordance with written, approved procedures; and,
- a summary of any unique safety or remediation issues associated with remediating the ground or surface water.

EVALUATION FINDINGS

Evaluation Criteria

The staff's review should verify that the licensee or responsible party has described the remediation activities and associated safety precautions in sufficient detail to allow the staff to determine if the proposed activities can be conducted safely and in compliance with NRC requirements. The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the decommissioning activities portion of the decommissioning plan. The staff should make a qualitative assessment of the adequacy of the licensee's or responsible party's proposed remediation methods and procedures to accomplish the remedation objectives in a manner that is protective of workers and the public and in compliance with NRC requirements. Detailed technical review of the safety precautions and procedures should be conducted pursuant to the criteria in Section 10 "Health and Safety Program" of this SRP.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of decommissioning activities for surface and ground water with the findings for the remaining areas in this section of the SRP (see Section 8.1, above)

SUGGESTED FORMAT

1. Length: 4-5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
1. Bullet 1 under Acceptance Criteria, above should be no more than 1 or 2 pages outlining the tasks in tabular form. Bullet 2 should be 1 or 2 sentences for each area. 1-2 paragraphs summarizing the information requested under Bullets 3 and 4. Bullets 5 and 6 should be 1 or 2 sentences. Bullet 7 should be no more than 1 paragraph in length. Licensees are also encouraged to submit the information in electronic format.

⁶See footnote 2

8.5 SCHEDULES

The purpose of the review of the licensee's or responsible party's schedule is to determine whether it complies with NRC's requirements for the completion of decommissioning activities.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(h), 10 CFR 40.42(h), 70.38(h), 72.54(j)

Regulatory Guidance

Currently under development

Information Requirements

The schedule supplied by the licensee should be sufficient to enable the staff to fully understand what activities will be performed to complete the decommissioning, the amount of time required to perform the activity and the timeframe for performing the activities. The staff's review should verify that the licensee or responsible party has included

- a Gantt or PERT chart detailing the proposed remediation tasks in the order in which they will occur and including the amount of time required to perform each decommissioning activity and the initiation and completion dates for the activities;
- a statement acknowledging that the dates in the schedule are contingent on NRC approval of the decommissioning plan;
- a statement acknowledging that circumstances can change during decommissioning, and, if the licensee determines that the decommissioning cannot be completed as outlined in the schedule, the licensee or responsible party will provide an updated schedule to NRC; and,
- If the decommissioning is not expected to be completed within the timeframes outlined in NRC regulations at 10 CFR 30.36(h)(1), 10 CFR 40.42(h)(1), 70.38(h)(1), or 72.54(j)(1), the staff should verify that the licensee has requested an alternative schedule for completing the decommissioning and has addressed the criteria in NRC regulations at 10 CFR 30.36(h)(2)(i)(1-5), 10 CFR 40.42(h)(2)(i) (1-5), 70.38(h)(2)(i)(1-5), or 72.54(k)(1-5)

EVALUATION FINDINGS

Evaluation Criteria

The staff's review should verify that the licensee's or responsible party's schedule for decommissioning its facility is in compliance with NRC requirements. The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the decommissioning activities portion of the decommissioning plan.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of decommissioning activities for soil with the findings for the remaining areas in this section of the SRP (see Section 8.1, above)

SUGGESTED FORMAT

1. Schedule: PERT or Gantt chart
2. Discussion: 1-2 sentences addressing Bullets 2 and 3 above, 2-3 paragraphs addressing the criteria in Bullet 4 above.
3. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 9.0 PROJECT MANAGEMENT AND ORGANIZATION

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 9.0 PROJECT MANAGEMENT AND ORGANIZATION

RESPONSIBILITY FOR REVIEW

<u>Primary:</u>	NMSS:	Division of Waste Management - Decommissioning Branch Division of Fuel Cycle Safety and Safeguards - Licensing Branch
	Region I:	Division of Nuclear Materials Safety - Decommissioning and Laboratory Branch
	Region II:	Division of Nuclear Materials Safety - Materials Licensing/Inspection Branch 1
	Region III:	Division of Nuclear Material Safety - Decommissioning Branch
	Region IV:	Division of Nuclear Material Safety - Nuclear Materials Licensing Branch, Fuel Cycle and Decommissioning Branch
<u>Secondary:</u>	None	
<u>Support:</u>	None	

AREAS OF REVIEW

The staff will review the information supplied by the licensee or responsible party to determine if the description of the licensee's or responsible party's decommissioning project organization

and management structure is adequate to allow the staff to fully understand how the licensee or responsible party will ensure that it will exercise adequate control over the decommissioning project. This information should include a description of the management structure for the project, including individual organizational unit reporting responsibilities and lines of authority; a description of how radioactive material work procedures (such as Radiation Work Permits) are developed reviewed, implemented and managed; a description of the qualifications necessary for individuals performing the various project management and safety functions; a description of the relationship between the various organizational units within the decommissioning organization (such as remedial activities and health and safety units) including the responsibilities and authority to revise or stop work; a description of the licensee's or responsible party's training program; and, a description of how contractors performing work at the facility will be managed during the decommissioning project.

REVIEW PROCEDURES

Acceptance Review

The staff will ensure that the decommissioning plan contains the information summarized under "Areas of Review," above. Staff will review the decommissioning project management portion of the decommissioning plan without assessing the technical accuracy or completeness of the information contained therein. The adequacy of this information will be assessed during the detailed review. Staff will review the decommissioning plan table of contents and the individual descriptions under "Areas of Review," above, to ensure that the licensee or responsible party has included this information in the decommissioning plan and to determine if the level of detail of the information appears to be adequate for the staff to perform a detailed technical review.

Safety Evaluation

The material to be reviewed is informational in nature, and no specific detailed technical analysis is required. The staff will make a qualitative assessment as to whether the licensee's or responsible party's descriptions of the proposed decommissioning project management and organization is adequate to serve as the basis for concluding that the licensee's or responsible party's management program will ensure that the appropriate control will be exercised during decommissioning operations.

9.1 DECOMMISSIONING MANAGEMENT ORGANIZATION

The purpose of the review of the description of the decommissioning project management organization is to verify that the licensee or responsible party has a management organization, management philosophy and the personnel resources to ensure that the decommissioning of the facility can be completed safely and in accordance with NRC requirements.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 70.38(g)(4)(ii) and 72.54(g)(2)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand the structure and functions of the decommissioning project management organization. The staff's review should verify that the following information is included in the description of the decommissioning project management organization:

- a description of the decommissioning organization including descriptions of the individual decommissioning project units within the decommissioning project organization, such as project management, health and safety, remedial activities, etc.;
- a description of the responsibilities of each of these decommissioning project units;
- description of the reporting hierarchy within the decommissioning project management organization including a chart or diagram showing the relationship of each decommissioning project unit to other project units and decommissioning project management; and
- a description of the responsibility and authority of each unit to ensure that decommissioning activities are conducted in a safe manner and in accordance with approved written procedures, including stop work authority of each unit and the manner in which concerns about safety issues are managed within the overall decommissioning project.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the decommissioning project management organization. NRC staff should verify that the descriptions of the decommissioning project management organization and individual project unit responsibilities is sufficiently detailed to allow the staff to understand the manner in which the organization will ensure that decommissioning will be conducted safely. The staff should verify that the individual project unit reporting hierarchy and lines of authority within the decommissioning project do not create conflicts that could compromise safety during decommissioning and that, as appropriate, individual units report directly to the unit responsible for overall decommissioning project management. The staff should verify that the individual project units, and individuals within each unit, have the responsibility and authority to bring safety concerns to decommissioning project

management and that stop work authority is provided to the unit responsible for safety and health. The staff should make a qualitative assessment of the adequacy of the licensee's or responsible party's proposed decommissioning management organization to accomplish the remediation objectives in a manner that is protective of workers and the public and in compliance with NRC requirements.

Sample Evaluation Findings

The NRC staff has reviewed the description of the decommissioning project management organization, position descriptions, management and safety position qualifications requirements and the manner in which the licensee [insert name of licensee] will utilize contractors during the decommissioning of its facility located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 9 (Decommissioning Project Management). Based on this review, the NRC staff has determined that the licensee [insert name] has provided sufficient information to allow the NRC staff to evaluate the licensee's decommissioning project management organization and structure to determine if the decommissioning can be conducted safely and in accordance with NRC requirements. (Note that this finding incorporates the results of the staff's assessment under Sections 9.2 - 9.5, below).

SUGGESTED FORMAT

1. Length: not to exceed 6 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 1-2 pages describing the information under each bullet above and a diagram showing the decommissioning project management organization and reporting authority. Licensees are also encouraged to submit the information in electronic format.

9.2 DECOMMISSIONING TASK MANAGEMENT

The purpose of the review of the description management of decommissioning tasks is to verify that all decommissioning activities will be conducted in accordance with written, approved procedures and that the licensee or responsible party has a methodology in place to manage the development, review, and maintain the procedures.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 70.38(g)(4)(ii) and 72.54(g)(2)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand the manner in which the licensee or responsible party will evaluate decommissioning tasks and develop and manage the procedures necessary for conducting the tasks. The staff's review should verify that the following information is included in the description of decommissioning task management:

- a description of the manner in which the decommissioning tasks are managed, such as through the use of a Radiation Work Permits (RWP)¹;
- a description of how individual decommissioning tasks are evaluated and how the RWPs are developed for each task;
- a description of how the RWPs are reviewed and approved by the decommissioning project management organization;
- a description of how RWPs are managed throughout the decommissioning project (i.e., how they are issued, maintained, revised, and terminated);
- a description of how individuals performing the decommissioning tasks are informed of the procedures in the RWP, including how they are initially informed and how they are informed of when an RWP is revised or terminated;

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the manner in which decommissioning tasks will be managed. The staff should verify that the licensee or responsible party will control decommissioning tasks through the use of written procedures. These procedures should be developed by individuals/units familiar with the physical and safety requirements necessary to complete the tasks safely. The procedures should be reviewed and approved by units responsible for physical, radiological, chemical, and occupational safety, as well as decommissioning project management. Note that NRC staff is not responsible for ensuring that physical, chemical or occupational safety procedures are adequate. Rather, the intent is to ensure that the licensee has an integrated approach for reviewing and approving procedures that could impact on radiological safety. Procedures should also undergo separate review by a group charged with ensuring that activities are conducted safely and in a manner that ensures that exposures to radiation are ALARA. Staff should verify that the licensee has a methodology to issue, modify (after appropriate review and approval) and terminate RWPs, as well as a program for ensuring that individuals performing the tasks are informed or trained in the

¹The term "RWP" will be used throughout this section to refer to the written procedure used to manage individual decommissioning tasks.

procedures. The staff should make a qualitative assessment of the adequacy of the licensee's or responsible party's proposed decommissioning task management procedures to accomplish the decommissioning in a manner that is protective of workers and the public and in compliance with NRC requirements.

Sample Evaluation Findings

None. The staff should combine the assessment of this section of the decommissioning plan with Section 9.1 above.

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 1 page summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

9.3 DECOMMISSIONING MANAGEMENT POSITIONS AND QUALIFICATIONS

The purpose of the review of the licensee's decommissioning management positions and qualifications is to ensure that the licensee or responsible party has the personnel resources to safely conduct and manage the decommissioning of its facility.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.33(3), 10 CFR 40.32(b), 10 CFR 70.22(a)(6), and 10 CFR 72.28(a-d)

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 70.38(g)(4)(ii) and 72.54(g)(2)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand the responsibilities and minimum qualifications required for each of the management and safety related positions within the licensee's or responsible party's decommissioning project organization. The staff's review should verify that the following information is included in the description of decommissioning positions and qualifications:

- a description of the duties and responsibilities of each management position in the decommissioning organization and the reporting responsibility of the position;
- a description of the duties and responsibilities of each chemical, radiological, physical and occupational safety-related position in the decommissioning organization and the reporting responsibility of the position;
- a description of the duties and responsibilities of each engineering, quality assurance, and waste management position in the decommissioning organization and the reporting responsibility of the position
- the minimum qualifications for each of the positions describe above, and the qualifications of the individuals currently occupying the positions (the licensee should also commit to providing the staff with the qualifications of any newly hired or replacements for these positions); and,
- a description of all decommissioning and safety committees including the membership of the committees, the duties and responsibilities of each committee and the authority of each committee.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the previous decommissioning activities carried out under the license. The staff should make a qualitative assessment of the adequacy of the licensee's or responsible party's decommissioning positions and qualifications requirements to ensure that the decommissioning can be conducted in a manner that is protective of workers and the public and in compliance with NRC requirements.

Sample Evaluation Findings

None. The staff should combine their assessment of this section of the decommissioning plan with Section 9.1 above.

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 1-2 paragraphs outlining the duties and responsibilities of each of the positions/committees above. Minimum qualifications should be summarized in tabular form and the licensee should submit the *curriculum vitae* of the individuals currently occupying the positions. Licensees are also encouraged to submit the information in electronic format.

9.3.1 Radiation Safety Officer

The purpose of the review of the Radiation Safety Officer position is to ensure that a qualified individual is designated and empowered to over-see the licensee's or responsible party's radiation protection program. The RSO must be qualified by training and experience for the types and quantities of radionuclides that will be encountered during decommissioning operations as well as the operations that will be undertaken to decommission the facility. In addition, the RSO must be empowered by the licensee or responsible party and be responsible for the implementation of the radiation protection program.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 33.13,(c) (2) 10 CFR 33.14 (b)(1), 10 CFR 34.42, 10 CFR 35.900, 10 CFR 36.13(d)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee or responsible party should be sufficient to allow the staff to fully evaluate the qualifications, authority and responsibilities of the RSO. The staff's review should verify that the following information is included in the description of the RSO's qualifications, duties and responsibilities:

- a description of the health physics and radiation safety education and experience required for individuals acting as the licensee's or responsible party's RSO
- a description of the responsibilities and duties of the RSO; and
- a description of the specific authority of the RSO to implement and manage the licensee's or responsible party's radiation protection program, including the RSO's access and "stop work" authority for all activities involving radioactive material at the site;

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements" above, is included in the licensee's or responsible party's description of the duties and responsibilities of the RSO. The staff should verify that the description of the RSO's duties and responsibilities are sufficiently detailed to allow the staff to determine whether the RSO can and will be able to oversee the site radiation protection program effectively. The staff should verify that the RSO has clearly defined authority and responsibility to oversee the radiation protection program, such that if conflicts arise regarding the appropriate manner in which to conduct the decommissioning the RSO can ensure that the decommissioning will be conducted safely.

The RSO should have at least a Bachelors degree in physical, chemical or radiological health sciences and 5 years experience in the types, and quantities of radioactive material at the site and similar experience involving the types of decommissioning operations proposed by the licensee or responsible party. The description of the RSO's duties and responsibilities should include the responsibility and authority to: review and approve all procedures involving the use of radioactive material at the facility; review and approve individuals as radiation workers at the site; conduct audits and inspections to ensure that activities involving the use of radioactive material are being conducted safely; monitoring of materials use and storage areas at the site; oversee the inventory, ordering, receipt and shipment of all radioactive material, and radioactive waste, at the site; ensure that all personnel at the site are trained in site radiation safety procedures and practices; ensure that sealed sources are leak-tested per NRC requirements; respond to and investigate incidents and accidents involving radioactive material at the site; monitor and evaluate radiation worker exposures at the site; and, maintain all required records. The RSO should have the authority and access to all areas involved in decommissioning or radioactive material usage at the site and the specific authority and responsibility to stop any operations that in the RSO's opinion are not being conducted safely.

Sample Evaluation Findings

None. The staff should combine their assessment of this section of the decommissioning plan with Section 9.1, above.

SUGGESTED FORMAT

1. Length: 4-5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for: Licensees Under 10 CFR 30,40, and 70" August 1989.
3. See Section 9.3, above

9.4 TRAINING

The purpose of the review of the licensee's training program is to provide the staff with sufficient information to determine if the licensee can provide its employees with the training necessary to complete the decommissioning safely and in accordance with NRC requirements. Note that training related to the Health and Safety Program will be evaluated under Section 10.1.2 of this SRP.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 19, 10 CFR 30.33(3), 10 CFR 40.32(b), 10 CFR 70.22(a)(6), 10 CFR 72.28(a), (b) and (d)

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 70.38(g)(4)(ii) and 72.54(g)(2)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee or responsible party should be sufficient to enable the staff to determine whether the licensee has an acceptable program to train employees in the remediation and safety procedures that will be used to decommission the facility. The staff's review should verify that the following information is included in the description of the training program for the facility:

- a description of the radiation safety training that the licensee will provide to each employee including pre-employment, annual/periodic training and specialized training to comply with 10 CFR Part 19;
- a description of any daily worker "jobsite" or "tailgate" training that will be provided at the beginning of each workday or job task to familiarize workers with job-specific procedures or safety requirements; and
- a description of the documentation that will be maintained to demonstrate that training commitments are being met.

EVALUATION FINDINGSEvaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of training at its facility. The staff should make a qualitative assessment of the adequacy of the licensee's or responsible party's training programs to ensure that workers are adequately informed of the hazards, preventative measures and procedures associated with performing each decommissioning task.

Sample Evaluation Findings

None. The staff should combine their assessment of this section of the decommissioning plan with Section 9.1, above.

SUGGESTED FORMAT

1. Length: 5-7 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 3-4 pages summarizing information under bullet 1 and 2 above, 1 page summarizing the information under bullet 3. Licensees are also encouraged to submit the information in electronic format.

9.5 CONTRACTOR SUPPORT

The purpose of the review of the licensee's description of interaction between the licensee or responsible party and contractors is to determine if the interactions will occur such that both licensee and contractor personnel are adequately protected and that the decommissioning can be conducted in accordance with NRC requirements.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 70.38(g)(4)(ii) and 72.54(g)(2)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to determine whether the licensee's or responsible party's radiation protection procedures are adequate to ensure the safety of contractor and licensee or responsible party personnel. The staff's review should verify that the following information is included in the discussion of contractor support at the facility:

- a summary of decommissioning tasks that will be performed by contractors including the areas at the site where they will perform these tasks;
- a description of the management interfaces that will be in place between the licensee or responsible party's management and on-site supervisors and contractor management and on-site supervisors;
- a description of the oversight responsibilities and authority that the licensee or responsible party will exercise over contractor personnel;
- a description of the training that will be provided to contractor personnel by the licensee or responsible party and the training that will be provided by the contractor; and,
- a commitment that the contractor will comply with all radiation safety and license requirements at the facility.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of contractor support at the site. The staff should make a qualitative assessment of the adequacy of the licensee's or responsible party's planned management interface procedures with contractor management to ensure that both licensee and contractor personnel are adequately informed of the hazards, preventative measures and procedures associated with performing each decommissioning task. The staff will verify that

the licensee has the authority and responsibility to ensure that contractor personnel perform decommissioning activities in accordance with all license commitments and NRC requirements. The staff will verify that all contractor personnel will receive adequate training (per the training program in section 9.4 above) either as part of the licensee's or responsible party's training program or as part of the contractor's training program

Sample Evaluation Findings

None. The staff should combine their assessment of this section of the decommissioning plan with Section 9.1, above.

SUGGESTED FORMAT

1. Length: not to exceed 4 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 3-5 paragraphs summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 10.0 HEALTH AND SAFETY PROGRAMS

**NRC STAFF IS CURRENTLY COMPLETING DEVELOPMENT OF THIS MODULE.
WHEN COMPLETED, IT WILL BE POSTED ON THE WORLD WIDE WEB AT:**

http://techconf.llnl.gov/cgi-bin/library?source=*&library=Lic_Term_lib&file=*

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

**STANDARD REVIEW PLAN 11.0
ENVIRONMENTAL MONITORING PROGRAM**

**NRC STAFF IS CURRENTLY COMPLETING DEVELOPMENT OF THIS MODULE.
WHEN COMPLETED, IT WILL BE POSTED ON THE WORLD WIDE WEB AT:**

[http://techconf.llnl.gov/cgi-bin/library?source=*&library=Lic_Term_lib&file=*](http://techconf.llnl.gov/cgi-bin/library?source=*&library=Lic_Term_lib&file=)

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 12.0 RADIOACTIVE WASTE MANAGEMENT PROGRAM

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 12.0 RADIOACTIVE WASTE MANAGEMENT PROGRAM

RESPONSIBILITY FOR REVIEW

<u>Primary:</u>	NMSS:	Division of Waste Management - Decommissioning Branch Division of Fuel Cycle Safety and Safeguards - Licensing Branch
	Region I:	Division of Nuclear Materials Safety - Decommissioning and Laboratory Branch
	Region II:	Division of Nuclear Materials Safety - Materials Licensing/Inspection Branch 1
	Region III:	Division of Nuclear Material Safety - Decommissioning Branch
	Region IV:	Division of Nuclear Material Safety - Nuclear Materials Licensing Branch, Fuel Cycle and Decommissioning Branch
<u>Secondary:</u>	None	
<u>Support:</u>	None	

AREAS OF REVIEW

The staff will review the information supplied by the licensee or responsible party to determine if the description of the program for the management of radioactive waste generated as part of the decommissioning of the facility is adequate to allow the staff to fully understand the types of radioactive waste that will be generated by decommissioning operations and the manner in

which the licensee will manage these wastes. This information will be used by the staff to ensure that the waste will be managed in accordance with NRC requirements, to support the staff's evaluation of the licensee's or responsible party's health and safety program, the evaluation of potential accidents and the licensee's or responsible party's cost estimates for decommissioning. This information should include descriptions of the types, volumes and activities of radioactive waste generated by the decommissioning operations, a description of how the wastes will be stored, treated (if on-site treatment is anticipated) and packaged for transport and disposal, and the name and location of the facility where the licensee or responsible party intends to treat and or dispose of the waste.

REVIEW PROCEDURES

Acceptance Review

The staff will review the decommissioning plan to ensure that, at a minimum, the decommissioning plan contains the information summarized under "Areas of Review," above. Staff will review the radioactive waste management portion of the decommissioning plan without assessing the technical accuracy or completeness of the information contained therein. The adequacy of the information will be assessed during the detailed technical review. Staff will review the decommissioning plan table of contents and the individual descriptions under "Areas of Review," above, to ensure that the licensee or responsible party has included this information in the decommissioning plan and to determine if the level of detail of the information appears to be adequate for the staff to perform a detailed technical review.

Safety Evaluation

The material to be reviewed is informational in nature, and no specific detailed technical analysis is required. The staff will verify that the manner in which the licensee or responsible party intends to package the waste for transport and disposal is acceptable by comparing the descriptions of the waste and the packaging procedures to the relevant NRC regulations. The staff will verify that the waste disposal locations are appropriate for the wastes generated during decommissioning by comparing the waste generated by the decommissioning operations to publically available information on the types of wastes that are accepted by the disposal facility. The staff will make a qualitative assessment as to whether the licensee's or responsible party's descriptions of the types, volumes and activities of radioactive waste generated by the decommissioning operations appear accurate (given the information presented in facility radiological status section of the decommissioning plan) and if the descriptions of how the wastes will be stored and treated are appropriate for the types and volumes of wastes as well as being protective of worker and public health and safety.

12.1 SOLID RADWASTE

The purpose of the review of the description of the management of solid radwaste generated during decommissioning operations is to ensure that the manner in which the licensee or responsible party proposes to manage the waste will be protective of the public health and

safety and that the waste will be treated and disposed of in accordance with NRC requirements. The information will also be used to support the staff's evaluation of potential accidents and the licensee's or responsible party's cost estimates for decommissioning.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR Part 20, Subpart K, 10 CFR 61.55, 10 CFR 61.56, 10 CFR 61.57, 10 CFR 71.5

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 70.38(g)(4)(ii) and 72.54(g)(2)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand the types, volumes, and activities of solid radwaste generated during decommissioning operations and the manner in which the licensee intends to manage and dispose of the wastes. The staff's review should verify that the following information is included in the solid radwaste section of the facility decommissioning plan:

- a summary of the types of solid radwaste that are expected to be generated during decommissioning operations, including (but not limited to) soil, structural and component metal, concrete, activated components, contaminated piping, wood, and plastic;
- a summary of the estimated volume, in cubic feet, of each solid radwaste type summarized under bullet 1 above;
- a summary of the radionuclides (including the estimated activity of each radionuclide) in each estimated solid radwaste type summarized under bullet 1 above;
- a summary of the volumes of Class A, B, C and Greater-than-Class-C solid radwaste that will be generated by decommissioning operations;
- a description of how and where each of the solid radwastes summarized under bullet 1 above, will be stored on-site prior to shipment for disposal;
- a description of how each of the solid radwastes summarized under bullet 1 above, will be treated and packaged to meet disposal site acceptance criteria prior to shipment for disposal;
- if appropriate, how the licensee or responsible party intends to manage volumetrically contaminated material;
- a description of how the licensee or responsible party will prevent contaminated soil, or other loose solid radwaste, from being re-dispersed after exhumation and collection; and
- the name and location of the disposal facility that the licensee intends to use for each solid radwaste type summarized under bullet 1 above

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the solid radwaste management program. The staff should verify that the licensee's or responsible party's program for the management of solid radwaste complies with NRC requirements at 10 CFR Part 20, Subpart K, 10 CFR 61.55, 10 CFR 61.56, 10 CFR 61.57 and 10 CFR 71.5. The staff should make a qualitative assessment of the accuracy of the licensee's or responsible party's descriptions of the types, volumes, and activities of the solid radwaste by comparing it to the information presented in the facility description, planned decommissioning activities, and radiological status portions of the decommissioning plan. The staff should make a qualitative assessment of the licensee's or responsible party's proposed methods to store solid radwaste prior to disposal and the manner in which volumetrically contaminated waste will be managed. The staff will verify that the waste disposal locations are appropriate for the solid wastes generated during decommissioning by comparing the solid waste generated by the decommissioning operations to publically available information on the types of solid wastes that are accepted by the disposal facility.

Sample Evaluation Findings

The staff may combine the evaluation finding for the licensee's or responsible party's description of solid radwaste management programs with the findings for the remaining areas in this section of the SRP as follows:

The NRC staff has reviewed the licensee's descriptions of the radioactive waste management program for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 12(Radioactive Waste Management Programs). Based on this review, the NRC staff has determined that the licensee's [insert name] programs for the management of radioactive waste generated during decommissioning operations ensure that the waste will be managed in accordance with NRC requirements and in a manner that is protective of the public health and safety.

SUGGESTED FORMAT

1. Length: not to exceed 2 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. Bullets 1- 4 under Acceptance Criteria, above should be in tabular format. 1-2 paragraphs describing the program under each of the remaining bullets. Licensees are also encouraged to submit the information in electronic format.

12.2 LIQUID RADWASTE

The purpose of the review of the description of the management of liquid radwaste generated during decommissioning operations is to ensure that the manner in which the licensee or responsible party proposes to manage the waste will be protective of the public health and safety and that the waste will be treated and disposed of in accordance with NRC requirements. The information will also be used to support the staff's evaluation of potential accidents and the licensee's or responsible party's cost estimates for decommissioning.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR Part 20, Subpart K, 10 CFR 61.55, 10 CFR 61.56, 10 CFR 61.57, 10 CFR 71.5

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand the types, volumes, and activities of liquid radwaste generated during decommissioning operations and the manner in which the licensee intends to manage and dispose of the wastes. The staff's review should verify that the following information is included in the liquid radwaste section of the facility decommissioning plan:

- a summary of the types of liquid radwaste that are expected to be generated during decommissioning operations
- a summary of the estimated volume, in liters, of each liquid radwaste type summarized under bullet 1 above;
- a summary of the radionuclides (including the estimated activity of each radionuclide) in each liquid radwaste type summarized under bullet 1 above;
- a summary of the estimated volumes of Class A, B, C and Greater-than-Class-C liquid radwaste that will be generated by decommissioning operations;
- a description of how and where each of the liquid radwastes summarized under bullet 1 above, will be stored on-site prior to shipment for disposal;
- a description of how the each of the liquid radwastes summarized under bullet 1 above, will be treated and packaged to meet disposal site acceptance criteria prior to shipment for disposal;
- the name and location of the disposal facility that the licensee intends to use for each liquid radwaste type summarized under bullet 1 above

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the liquid radwaste management program. The staff should verify that the licensee's or responsible party's program for the management of liquid radwaste complies with NRC requirements at 10 CFR Part 20, Subpart K, 10 CFR 61.55, 10 CFR 61.56, 10 CFR 61.57 and 10 CFR 71.5. The staff should make a qualitative assessment of the accuracy of the licensee's or responsible party's descriptions of the types, volumes, and activities of liquid radwaste by comparing it to the information presented in the facility description, planned decommissioning activities, and radiological status portions of the decommissioning plan. The staff should make a qualitative assessment of the licensee's or responsible party's proposed methods to store liquid radwaste prior to disposal. The staff will verify that the waste disposal locations are appropriate for the liquid wastes generated during decommissioning by comparing the liquid waste generated by the decommissioning operations to publically available information on the types of liquid wastes that are accepted by the disposal facility.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of liquid radwaste management programs with the findings for the remaining areas in this section of the SRP (see Section 12.1, above)

SUGGESTED FORMAT

1. Length: not to exceed 2 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. Bullets 1- 4 under Acceptance Criteria, above should be in tabular format. 1-2 paragraphs describing the program under each of the remaining bullets. Licensees are also encouraged to submit the information in electronic format.

12.3 MIXED WASTE

The purpose of the review of the description of the management of mixed waste generated during decommissioning operations is to ensure that the manner in which the licensee or responsible party proposes to manage the mixed waste will be protective of the public health and safety and that the waste will be managed, treated and disposed of in accordance with NRC and Environmental Protection Agency (or EPA authorized State) requirements. The information will also be used to support the staff's evaluation of potential accidents and the licensee's or responsible party's cost estimates for decommissioning.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR Part 20, Subpart K, 10 CFR 61.55, 10 CFR 61.56, 10 CFR 61.57, 10 CFR 71.5, 40 CFR 260-270

Regulatory Guidance

Low-level Mixed Waste, A RCRA Perspective for NRC Licensees

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand the types, volumes, and activities of mixed waste generated during decommissioning operations and the manner in which the licensee intends to manage and dispose of the wastes. The staff's review should verify that the following information is included in the mixed waste section of the facility decommissioning plan:

- a summary of the types of solid and liquid mixed waste that are expected to be generated during decommissioning operations;
- a summary of the estimated volumes, in cubic feet of each solid mixed waste type summarized under bullet 1 above and in liters for each liquid mixed waste;
- a summary of the radionuclides (including the estimated activity of each radionuclide) in each type of mixed waste type summarized under bullet 1 above;
- a summary of the estimated volumes of Class A, B, C and Greater-than-Class-C mixed waste that will be generated by decommissioning operations;
- a description of how and where each of the mixed wastes summarized under bullet 1 above, will be stored on-site prior to shipment for disposal;
- a description of how the each of the mixed wastes summarized under bullet 1 above, will be treated and packaged to meet disposal site acceptance criteria prior to shipment for disposal;
- the name and location of the disposal facility that the licensee intends to use for each mixed waste type summarized under bullet 1 above;
- a discussion of the requirements of all other regulatory agencies having jurisdiction over the mixed waste; and,
- a demonstration that the licensee possess the appropriate EPA or State permits to generate, store and/or treat the mixed wastes;

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of the liquid radwaste management program. The staff should verify that the licensee's or responsible party's program for the management of

mixed waste complies with NRC requirements at 10 CFR Part 20, Subpart K, 10 CFR 61.55, 10 CFR 61.56, 10 CFR 61.57 and 10 CFR 71.5. The staff should make a qualitative assessment of the accuracy of the licensee's or responsible party's descriptions of the types, volumes, and activities of mixed waste by comparing it to the information presented in the facility description, planned decommissioning activities, and radiological status portions of the decommissioning plan. The staff should make a qualitative assessment of the licensee's or responsible party's proposed methods to store mixed waste prior to disposal. The staff will verify that the waste disposal locations are appropriate for the mixed wastes generated during decommissioning by comparing the mixed waste generated by the decommissioning operations to publically available information on the types of mixed wastes that are accepted by the disposal facility. Note that the NRC staff is NOT responsible for ensuring that the licensee or responsible party's program complies with the requirements of 40 CFR 260-270 or the Department of Transportation regulations pertaining to the transportation of the hazardous component of the mixed waste. The staff should make a qualitative assessment of the acceptability of the licensee's or responsible party's descriptions of the methods they will employ to comply with the requirements of other agencies with regulatory responsibility for the mixed waste.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of mixed waste management programs with the findings for the remaining areas in this section of the SRP (see Section 12.1, above)

SUGGESTED FORMAT

1. Length: not to exceed 2 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. Bullets 1- 4 under Acceptance Criteria, above should be in tabular format. 1-2 paragraphs describing the program under each of the remaining bullets. Licensees are also encouraged to submit the information in electronic format.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 13.0 QUALITY ASSURANCE PROGRAM

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 13.0 QUALITY ASSURANCE PROGRAM

RESPONSIBILITY FOR REVIEW

<u>Primary:</u>	NMSS:	Division of Waste Management - Decommissioning Branch Division of Fuel Cycle Safety and Safeguards - Licensing Branch
	Region I:	Division of Nuclear Materials Safety - Decommissioning and Laboratory Branch
	Region II:	Division of Nuclear Materials Safety - Materials Licensing/Inspection Branch 1
	Region III:	Division of Nuclear Material Safety - Decommissioning Branch
	Region IV:	Division of Nuclear Material Safety - Nuclear Materials Licensing Branch, Fuel Cycle and Decommissioning Branch
<u>Secondary:</u>	None	
<u>Support:</u>	None	

AREAS OF REVIEW

The staff will review the information supplied by the licensee to determine if the description of the quality assurance (QA) program is adequate to allow the staff to conclude that the licensee or responsible party has adequate controls in place to support the decommissioning. Further, if

the licensee effectively implements the QA program described, the data collected should be accurate and of sufficient quality to justify the conclusions drawn from the information. This information should include a description of the organization responsible for implementing the QA program; a description of the QA program, including descriptions of the manner in which QA activities are controlled; a description of the manner in which QA program documents are controlled; a description of how measuring and test equipment is controlled; a description of how conditions adverse to quality are corrected; a description of the QA records that will be maintained; and, a description of the audits and surveillances that are performed as part of the QA program.

REVIEW PROCEDURES

Acceptance Review

The staff will ensure that the decommissioning plan contains the information summarized under "Areas of Review," above. Staff will review the quality assurance program without assessing the adequacy or completeness of the information contained therein. The adequacy of this information will be assessed during the staff's detailed review. Staff will review the decommissioning plan table of contents and the individual descriptions under "Areas of Review," above, to ensure that the licensee or responsible party has included this information in the decommissioning plan and to determine if the level of detail of the information appears to be adequate for the staff to perform a detailed review.

Safety Evaluation

The material to be reviewed is informational in nature, and no specific detailed technical analysis is required. The staff will make a qualitative assessment as to whether the licensee's QA program is adequate to ensure that accurate, high-quality information is developed to support the decommissioning of the facility.

1.4.1 ORGANIZATION

The purpose of the review of the QA organization is to verify that the licensee or responsible party has an adequate organization, management philosophy, and the resources necessary to ensure that the information submitted to support the decommissioning is accurate and of sufficient quality to justify the conclusions drawn from the information.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(ii), 40 CFR 42(g)(4)(ii), 40 CFR 28(b)(3), 70 CFR 22(f), 70 CFR 38(g)(4)(ii), 72 CFR 54(g)(6)

Regulatory Guidance

None

Information Requirements

The staff will review the licensee's description of its organizational structure to ensure that persons and organizations performing quality affecting activities have sufficient authority and freedom to identify quality problems, provide solutions, and verify that solutions have been implemented. The staff's review should verify that the following information is included in the description of the QA program organization:

- a description of the QA program management organization,
- a description of the duties responsibilities of each unit within the organization and how delegation of responsibilities is managed within the decommissioning program
- a description of how work performance is evaluated;
- a description of the authority of each unit within the QA program
- an organization chart of the QA program organization

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements" above is included in the licensee's or responsible party's description of the QA program. The staff should verify that the organization or individual responsible for submitting the license application exercises and retains the responsibility for the establishment and execution of the overall program. The staff should verify that major delegations of work are fully described and in each case organizational responsibilities and methods for control of the work by the applicant are described, including how responsibility for delegated work is to be retained and exercised. The staff should verify that licensee or responsible party and its prime contractors describe how responsibility is exercised for the overall QA program and that the extent of management responsibility and authority from the applicant are addressed. The staff should verify that policies regarding the implementation of the QA program are documented and made mandatory.

The staff should verify that the licensee or responsible party and its contractors will evaluate the performance of work delegated to other organizations, including audits and surveillances of the contractor's QA programs and audits and surveillances of subcontractors, consultants, and vendors furnishing equipment or services to the applicant or its contractors. The frequency and method of this evaluation should be specified.

The staff should verify that the licensee or responsible party and prime contractors identify a management position that retains overall authority and responsibility for the QA program (normally, this position is filled by the QA Manager). The staff should verify that the QA Manager position is at the same, or at a higher organization level than the position of the highest line

manager directly responsible for performing activities affecting quality (such as engineering, procurement, construction, and operation) and is sufficiently independent from cost and schedule restraints (this does not mean that the QA position must report outside of the project or program). The staff should verify that the authority and duties of persons and organizations performing functions related to meeting the performance objectives are clearly established and delineated in writing, including both the performing functions of attaining the requisite quality of work (quality achieving) and the assurance functions of verifying the attainment of quality (quality assuring). The staff should verify that designated QA personnel, sufficiently free from direct pressures resulting from cost and schedule, have the responsibility, delineated in writing, to stop unsatisfactory work and control further processing, delivery, or installation of nonconforming material.

The staff should verify that persons and organizations performing quality assuring functions have sufficient authority and organizational freedom to (1) identify quality problems, (2) initiate, recommend, or provide solutions through designated channels, and (3) verify implementation of solutions. The staff should verify that persons and organizations with the above authority are identified and a description of how those actions are carried out is provided.

The staff should verify that provisions are established for the resolution of disputes involving quality arising from a difference of opinion between QA personnel and other department personnel. The staff should verify that the position description ensures that the individual directly responsible for the definition, direction, and effectiveness of the overall QA program has sufficient authority to effectively implement responsibilities. This position is to be sufficiently free from cost and schedule responsibilities.

The staff should verify that the person responsible for the onsite QA program is identified by position and has the appropriate organizational position, responsibilities, and authority to exercise proper control over the QA program.

The staff should verify that organization charts clearly identify all the on site and off site organizational elements that function under the cognizance of the QA program.

Sample Evaluation Findings

The NRC staff has reviewed the Quality Assurance Program for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 13 (QA Program). Based on this review the NRC staff has determined that the licensee's [insert name] QA program is sufficient to ensure that information submitted to support the decommissioning of its facility should be of sufficient quality to allow the staff to evaluate and determine whether the licensee's planned decommissioning activities to ensure that the decommissioning can be conducted in accordance with NRC requirements. (Note that this finding incorporates the results of the staff's assessment of the entire QA program as described in the following subsections of Section 13).

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

13.2 QUALITY ASSURANCE PROGRAM

ACCEPTANCE CRITERIA

The purpose of the review of the QA program is to verify that the licensee's or responsible party's QA program and activities affecting quality will be controlled by written policies, procedures and instruction, which if effectively implemented, should ensure that the information submitted to support the decommissioning is accurate and of sufficient quality to justify the conclusions drawn from the information.

Regulatory Requirements

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 40.28(b)(3), 70.22(f), 70.38(g)(4)(ii), 72.54(g)(6)

Regulatory Guidance

None

Information Requirements

The staff will review the licensee's or responsible party's QA program to determine if activities affecting quality will be conducted in accordance with written policies, procedures and instructions and that activities affecting quality are accomplished by suitably trained and qualified individuals. The staff shall review the licensee's QA program to ensure that quality affecting activities are prescribed by documented procedures, drawings or instructions. The staff will verify that the following information is included in the description of the QA program:

- a commitment that activities affecting the quality of site decommissioning will be subject to the applicable controls of the QA program and activities covered by the QA program are identified on program defining documents;
- a brief summary of the company's corporate QA policies;
- a description of provisions to ensure that technical and quality assurance procedures required to implement the QA program are consistent with regulatory, licensing, and QA program requirements and are properly documented and controlled;
- a description of the management reviews, including the documentation of concurrence in these quality-affecting procedures;

- a description of the quality-affecting procedural controls of the principal contractors, including documentation of the acceptance of the controls before the initiation of activities affected by the program;
- a description of how NRC will be notified of changes (a) for review and acceptance in the accepted description of the QA program as presented or referenced in the DP before implementation and (b) in organizational elements within 30 days after the announcement of the changes (Note: Editorial changes or personnel reassignments of a nonsubstantive nature do not require NRC notification);
- a description is provided of how management (above or outside the QA organization) regularly assesses the scope, status, adequacy, and compliance of the QA program;
- a description of the instruction provided to personnel responsible for performing activities affecting quality pertaining to the purpose, scope, and implementation of the quality-related manuals, instructions, and procedures;
- a description of the training and qualifications of personnel verifying activities affecting quality in the principles, techniques, and requirements of the activity being performed;
- for formal training and qualification programs, documentation includes the objectives and content of the program, attendees, and date of attendance;
- a description of the self-assessment program to confirm that activities affecting quality comply with the QA program;
- a commitment that persons performing self-assessment activities are not to have direct responsibilities in the area they are assessing;
- a description of the organizational responsibilities for ensuring that activities affecting quality are (a) prescribed by documented instructions, procedures, and drawings; and, (b) accomplished through implementation of these documents; and,
- a description of the procedures to ensure that instructions, procedures, and drawings include quantitative acceptance criteria (such as those pertaining to dimensions, tolerances, and operating limits) and qualitative acceptance criteria (such as workmanship samples) for determining that important activities have been satisfactorily performed.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements" above, is included in the description of the QA program.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of the QA program with the finding for the remaining areas in this section of the SRP (see Section 13.1, above).

SUGGESTED FORMAT

1. Length: not to exceed 10 pages

2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

13.3 DOCUMENT CONTROL

The purpose of the review of the licensee's or responsible party's description of how QA program documents are issued and amended is to ensure that adequate control is exercised over the development, issuance and revision of the documents.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 40.28(b)(3), 70.22(f), 70.38(g)(4)(ii), 72.54(g)(6)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee or responsible party should be sufficient to enable the staff to understand how the licensee or responsible party will develop, issue and revise documents associated with the QA program. The staff's review should verify that the following information is included in the description of the QA document control program:

- a summary of the types of QA documents that are included in the program
- a description of how the licensee or responsible party develops, issues, revises and retires QA documents

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements," above, is included in the licensee's or responsible party's description of the QA document control program. The staff should verify that the scope of the document control program is described, and the types of controlled documents are identified. As a minimum, controlled documents include (1) quality assurance and quality control manuals and quality-affecting procedures, (2) technical reports. The staff should verify that procedures for the review, approval, and issuance of documents and changes will be established and described to ensure technical adequacy and inclusion of appropriate quality requirements before implementation. The staff should verify that procedures will be established to ensure that changes to documents

are reviewed and approved by the same organizations as those that performed the initial review and approval or by other qualified responsible organizations delegated by the applicant. The staff should verify that procedures will be established to ensure that documents are available at the location where the activity will be performed prior to commencing work. The staff should verify that procedures will be established to ensure that obsolete or superseded documents are removed and replaced by applicable revisions in work areas in a timely manner.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of the QA program with the finding for the remaining areas in this section of the SRP (see Section 13.1, above).

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

13.4 CONTROL OF MEASURING AND TEST EQUIPMENT

The purpose of the review of the description of the test and measurement equipment calibration program is to verify that the licensee or responsible has a program to ensure that equipment used to support decommissioning activities are properly controlled, calibrated and maintained.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 40.28(b)(3), 70.22(f), 70.38(g)(4)(ii), 72.54(g)(6)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee or responsible party should be sufficient to enable the staff to fully understand the methods and procedures that the licensee or responsible party will use to ensure that only accurate, calibrated, test and measurement equipment will be used during the decommissioning project. The staff's review should verify that the following information is included in the description of the test and measurement equipment QA program.

- a summary of the test and measurement equipment used in the program
- description of how and at what frequency the equipment will be calibrated;
- a description of the daily calibration checks that will be performed on each piece of test or measurement equipment;
- a description of the documentation that will be maintained to demonstrate that only properly calibrated and maintained equipment was used during the decommissioning

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements," above, is included in the licensee's or responsible party's description of the test and measurement equipment program. The staff should verify that the scope of the program for the control of measuring and test equipment is described and the types of equipment to be controlled are established. The staff should verify that QA and other organizations' responsibilities are described for establishing, implementing, and ensuring effectiveness of the calibration and adjustment program. The staff should verify that procedures will be established for calibration (technique and frequency), maintenance, and control of the measuring and test equipment. The review of and documented concurrence in these procedures is described, and the organization responsible for these functions is identified. The staff should verify that measuring and test equipment is identified and traceable to the calibration test data. The staff should verify that measuring and test equipment will be labeled or tagged or "otherwise controlled" to indicate due date of the next calibration. The method to "otherwise control" equipment should be described. The staff should verify that measuring and test equipment will be calibrated at specified intervals on the basis of the required accuracy, purpose, degree of usage, stability characteristics, and other conditions affecting the measurement.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of the QA program with the finding for the remaining areas in this section of the SRP (see Section 13.1, above).

SUGGESTED FORMAT

1. Length: not to exceed 3 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

13.5 CORRECTIVE ACTION

The staff will review the licensee's QA program to ensure that measures have been established to assure that conditions adverse to quality are promptly identified and corrected.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(i), 40.42(g)(4)(ii), 40.28(b)(3), 70.22(f), 70.38(g)(4)(ii), 72.54(g)(6)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee or responsible party should be sufficient to enable the staff to determine whether adequate procedures and controls are in place to identify and correct conditions that will adversely affect quality. The staff's review should verify that the following information is included in the description of the corrective action program portion of the QA program:

- a description of the corrective action procedures for the facility, including a description of how the corrective action is determined to be adequate;
- a description of the documentation maintained for each corrective action and any followup activities by the QA organization after the corrective action is implemented;

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements," above, is included in the licensee's or responsible party's description of the corrective action. The staff should verify that procedures will be established for a corrective action program and that the QA organization reviews and documents concurrence in the procedures. The staff should verify that corrective action will be documented and initiated following the determination of a condition adverse to quality (such as nonconformance, failure, malfunction, deficiency, deviation, and defective material and equipment) to preclude recurrence. The staff should verify that the QA organization will be included in the concurrence chain regarding the adequacy of the corrective action. The staff should verify that followup action will be taken by the QA organization to verify the proper implementation of corrective action and to close out the corrective action in a timely manner. The staff should verify that significant conditions adverse to quality, the cause of the conditions, and the corrective action taken to preclude repetition will be documented and reported to immediate management and upper levels of management for review and assessment.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of the QA program with the finding for the remaining areas in this section of the SRP (see Section 13.1, above).

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

13.6 QUALITY ASSURANCE RECORDS

The purpose of the review of the QA records program is to verify that the licensee or responsible party has procedures and facilities in place to adequately maintain and store the QA program records.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 40.28(b)(3), 70.22(f), 70.38(g)(4)(ii), 72.54(g)(6)

Regulatory Guidance

None

Information Requirements

The information supplied by the licensee or responsible party should be sufficient to enable the staff to fully understand the types of procedures that will be in place to manage the QA program records. The staff should verify that the following information is included in the description of the QA records program:

- a description of the manner in which the QA records will be managed
- a description of the responsibilities of the QA organization as well as all other units involved in the decommissioning to implement and maintain QA records; and,
- a description of the QA records storage facility.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements," above, is included in the licensee's or responsible party's description of the quality assurance records program. The staff should verify that the QA records program is described, and includes results of reviews, inspections, tests, audits, and material analyses; monitoring records of work performance; records on the qualification of personnel, procedures, and equipment. The staff should verify that QA and other organizations are identified and their responsibilities are described for the definition and implementation of activities related to QA records. The staff should verify that suitable facilities for the storage of records are described and satisfy the requirements of ANSI/ASME NQA-1. Alternatives to the fire protection rating provisions are acceptable if records storage facilities conform to National Fire Protection Association Standard NFPA 232, Class 1, for permanent records and if the 2-hour fire-rating requirement contained in proposed ANSI N45.2.9 is met by the applicant in any one of the following three ways: (1) a 2-hour-rated vault meeting NFPA 232, (2) 2-hour-rated file containers meeting NFPA 232 (Class B), or (3) a 2-hour-rated fire resistant file room meeting NFPA 232.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of the QA program with the finding for the remaining areas in this section of the SRP (see Section 13.1, above).

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

13.7 AUDITS AND SURVEILLANCES

The purpose of the staff's review of the licensee's or responsible party's description of audits and surveillances is to ensure that the licensee has a comprehensive system of audits planned to verify compliance with all aspects of the QA program, and to determine the effectiveness of the QA program.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 40.28(b)(3), 70.22(f), 70.38(g)(4)(ii), 72.54(g)(6)

Regulatory Guidance

None

Information Criteria

The information supplied by the licensee's or responsible party's should be sufficient to allow the staff to determine if the of audit and surveillance program is adequate to ensure that a comprehensive system of audits planned to verify compliance with all aspects of the QA program is in place to determine the effectiveness of the QA program. The following information should be included in the description of the audit program:

- a description of the audit program, including the procedures for conducting the audits or surveillances
- a description of the records and documentation generated during the audits and the manner in which the documents are managed
- a description of all followup activities associated with audits or surveillances
- a description of the trending/tracking that will be performed on the results of audits and surveillances

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements," above, is included in the licensee's or responsible party's description of the audits program for the facility. The staff should verify that audits and surveillances will be performed in accordance with pre-established written procedures or checklists and conducted by trained personnel not having direct responsibilities for the achievement of quality in the areas being audited. The staff should verify that audit and surveillance results will be documented and then reviewed with management having responsibility in the area audited. The staff should verify that provisions exist such that appropriate follow-up corrective action to audit and surveillance reports will be undertaken by responsible management. Auditing organizations schedule and conduct appropriate follow-up to assure that the corrective action is effectively accomplished. The staff should verify that both technical and QA programmatic audits and surveillances will be performed to provide a comprehensive independent verification and evaluation of procedures and activities affecting quality. The staff should verify that audits and surveillances objectively assess the effectiveness and proper implementation of the QA program and address the technical adequacy of the activities being conducted. The staff should verify that provisions will be provided such that audits and surveillances are required to be performed in all areas where the requirements of the QA program are applicable. The staff should verify that audit and surveillance deficiency data are analyzed and trended. The staff should verify that reports which indicate quality trends and the effectiveness of the QA programs will be given to management for review, assessment, corrective action and follow up.

Sample Evaluation Findings

None. The staff should combine the evaluation finding for the licensee's or responsible party's description of the QA program with the finding for the remaining areas in this section of the SRP (see Section 13.1, above).

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 14.0 FACILITY RADIATION STATUS SURVEYS

**NRC STAFF IS CURRENTLY COMPLETING DEVELOPMENT OF THIS MODULE.
WHEN COMPLETED, IT WILL BE POSTED ON THE WORLD WIDE WEB AT:**

[http://techconf.llnl.gov/cgi-bin/library?source=*&library=Lic_Term_lib&file=*](http://techconf.llnl.gov/cgi-bin/library?source=*&library=Lic_Term_lib&file=)

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

**STANDARD REVIEW PLAN 15.0
FINANCIAL ASSURANCE**

**NRC STAFF IS CURRENTLY COMPLETING DEVELOPMENT OF THIS MODULE.
WHEN COMPLETED, IT WILL BE POSTED ON THE WORLD WIDE WEB AT:**

http://techconf.llnl.gov/cgi-bin/library?source=*&library=Lic_Term_lib&file=*

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NESS DECOMMISSIONING PROGRAM

**STANDARD REVIEW PLAN 16.0
RESTRICTED USE/ALTERNATE CRITERIA**

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.

NMSS DECOMMISSIONING PROGRAM

STANDARD REVIEW PLAN 16.0 RESTRICTED USE/ALTERNATE CRITERIA

RESPONSIBILITY FOR REVIEW

Primary: NMSS: Division of Waste Management - Decommissioning Branch
 Division of Fuel Cycle Safety and Safeguards - Licensing Branch

 Region I: Division of Nuclear Materials Safety - Decommissioning and Laboratory Branch

 Region II: Division of Nuclear Materials Safety - Materials Licensing/Inspection Branch 1

 Region III: Division of Nuclear Material Safety - Decommissioning Branch

 Region IV: Division of Nuclear Material Safety - Nuclear Materials Licensing Branch, Fuel Cycle and Decommissioning Branch

Secondary: None

Support: Office of General Counsel

AREAS OF REVIEW

The staff will review the information supplied by the licensee or responsible party to determine if the description of the activities undertaken by the licensee or responsible party is adequate to allow the staff to conclude that the licensee or responsible party has complied with the

applicable requirements of 10 CFR 20.1403 or 20.1404 for those licensees that intend to request termination of its radioactive materials license using either the restricted use or alternate criteria provisions of Subpart E.

If the licensee or responsible party is requesting license termination under restricted use this information should include: a demonstration that the licensee or responsible party qualifies for license termination under 10 CFR 20.1403(a); a description of the institutional controls the licensee or responsible party has instituted at the site; the financial assurance the licensee or responsible party has provided for the site; a description of the activities undertaken by the licensee or responsible party to obtain advice from the public on the proposed institutional controls and the results of these activities; and, a demonstration that the potential doses from residual radioactive material at the site will not exceed the limits in 10 CFR 20.1403 or 20.1404 and are ALARA.

If the licensee or responsible party is requesting license termination using the alternate criteria provisions of 10 CFR 1404, the information should include a demonstration that doses from residual radioactive material at the site will not exceed the limits in 10 CFR 20.1404(a)(1); a description of the restrictions on site use the licensee or responsible party has provided to comply with 10 CFR 20.1404(a)(2); a demonstration that the potential doses are ALARA and a description of the activities undertaken by licensee or responsible party to obtain advice from the public and the results of these activities¹.

REVIEW PROCEDURES

Acceptance Review

The staff will ensure that the decommissioning plan contains the information summarized under "Areas of Review," above. Staff will review the licensee's or responsible party's descriptions of the 10 CFR 20.1403 or 20.1404 compliance activities without assessing the technical accuracy or completeness of the information contained therein. The adequacy of this information will be assessed during the detailed review. Staff will review the decommissioning plan table of contents and the individual descriptions under "Areas of Review," above, to ensure that the licensee or responsible party has included this information in the decommissioning plan and to determine if the level of detail of the information appears to be adequate for the staff to perform a detailed technical review.

Safety Evaluation

The material to be reviewed is both informational and technical in nature. The staff will make a qualitative assessment as to whether the licensee's or responsible party's eligibility

¹ 10 CFR 20.1403 requires that licensees or responsible parties obtain advice from institutions and individuals that may be affected by the decommissioning on specific issues related to institutional controls and financial assurance. However, 10 CFR 20.1404 provides for a much broader discussion of the issues associated with the use of alternate criteria and, as such, licensees must obtain advice on essentially any issue associated with the use of alternate criteria.

demonstration, description of institutional controls, description of financial assurance, and description of activities undertaken to obtain advice from the public on the proposed institutional controls and the results of these activities are adequate to allow the staff to conclude that the licensee or responsible party has complied with the requirements of 10 CFR 20.1403 or 20.1404. The staff will make a quantitative evaluation of the licensee's or responsible party's dose calculations and ALARA demonstrations.

16.1 RESTRICTED USE

16.1.1 ELIGIBILITY DEMONSTRATION

ACCEPTANCE CRITERIA

The purpose of the review of the licensee's or responsible party's demonstration that it is eligible to request release of the site under the provisions of 10 CFR 20.1403 is to verify that the licensee or responsible party has demonstrated that further reductions in residual radioactivity at the site to meet the unrestricted release criteria in 10 CFR 20.1402 would: (1) result in net public harm; or (2) are not being undertaken because the residual radioactivity levels are ALARA.

Regulatory Requirements

10 CFR 20.1403(a)

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 70.38(g)(4)(ii) and 72.54(g)(2)

Regulatory Guidance

DG-4006 "Demonstrating Compliance with the Radiological Criteria for License Termination", Section 3.1 and 3.2

Information Requirements

The information supplied by the licensee or responsible party should be sufficient to enable the staff to fully understand how the licensee has concluded that reducing radioactivity to the unrestricted use levels in 10 CFR 20.1402 would result in net public harm or are not being undertaken because the residual radioactivity levels are ALARA. The staff's review should verify that the following information is included in the licensee's or responsible party's demonstration that it is eligible for requesting license termination under the provisions of 10 CFR 20.1403:

- a demonstration that the benefits of dose reduction are less than the cost of doses, injuries and fatalities; or
- a demonstration that the proposed residual radioactivity levels at the site are ALARA

EVALUATION FINDINGS

Evaluation Criteria

If the licensee or responsible party has concluded that further reductions in residual radioactivity levels would result in net public or environmental harm, the staff should verify that the licensee has accurately calculated the benefits vs costs of further remediation using Equation 25 in Section 3.1 of DG-4006. If the licensee or responsible party has concluded that further reductions in residual radioactivity levels are not required because they are ALARA the staff should verify that the licensee or responsible party has accurately calculated the benefits of further remediation vs costs using the methodology described in Section 3.1 of DG-4006.

Sample Evaluation Findings

The NRC staff has reviewed the licensee's justification for requesting license termination under restricted conditions in the Decommissioning Plan for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 16 (Restricted Use/Alternate Criteria).

Based on this review, the NRC staff has determined that the licensee [insert name] has adequately demonstrated that [insert one] [the benefits of dose reduction are less than the cost of doses, injuries and fatalities] or [further reductions in radioactivity levels at the site are unnecessary because they are ALARA].

SUGGESTED FORMAT

1. Length: not to exceed 2 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989. Licensees are also encouraged to submit the information in electronic format.

16.1.2 INSTITUTIONAL CONTROLS

ACCEPTANCE CRITERIA

The purpose of the review of the description of the institutional controls the licensee or responsible party has provided for the site is to determine if the licensee or responsible party has made provision for legally enforceable institutional controls that will limit the dose to the average member of the critical group to less than 25 mrem/yr.

Regulatory Requirements

10 CFR 20.1403(b)

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 70.38(g)(4)(ii) and 72.54(g)(2)

Regulatory Guidance

DG-4006 "Demonstrating Compliance with the Radiological Criteria for License Termination", Section 4.1

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand what institutional controls the licensee has provided for the site and the manner in which these institutional controls will limit doses to the average member of the critical group to 25 mrem/yr. The staff's review should verify that the following information is included in the description of institutional controls that the licensee has provided for the site:

- a description of the legally enforceable institutional control(s) and an explanation of how the institutional control is a legally enforceable mechanism;
- a description of the restrictions on present and future landowners;
- a description of the parties enforcing and their authority to enforce the institutional control(s);
- a discussion of the durability² of the institutional control(s);
- a description of the activities that the party with the authority to enforce the institutional controls will undertake to enforce the institutional control(s)
- the manner in which the party with the authority to enforce the institutional control(s) will be replaced if that party is no longer willing or able to enforce the institutional control(s)
- a description of the duration of the institutional control(s), the conditions that will end the institutional control(s) and the activities that will be undertaken to end the institutional control(s)
- a description of the corrective actions that will be undertaken in the event the institutional control(s) fail; and,
- a description of the records pertaining to the institutional controls, how they will be maintained and the duration of the post-license termination maintenance period.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements" above, for legally enforceable institutional controls on privately owned land should satisfy the guidance summarized in Section 4.1.1 of DG-4006. For legally enforceable institutional

² The Commission has stated (see Section B3.3 of the Statements of Consideration for 10 CFR Part 20, Subpart E "Radiological Criteria for License Termination") that stringent institutional controls would be needed for sites involving large quantities of uranium and thorium contamination. Typically these would involve legally enforceable deed restrictions backed up by State and local government control or ownership, engineered barriers, and as appropriate, Federal ownership

controls on government owned land, the information should satisfy the guidance in Section 4.1.2 of DG-4006.

Sample Evaluation Findings

The NRC staff has reviewed the description of the institutional controls in the Decommissioning Plan for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 16 (Restricted Use/Alternate Criteria). Based on this review, the NRC staff has determined that the licensee [insert name] has adequately demonstrated that institutional controls are enforceable, durable and should ensure that doses to the public comply with the criteria in 10 CFR 20.1403. In addition, the licensee or responsible party has made adequate provisions to replace the party charged with enforcing the institutional control in the event that the party is no longer willing or able to enforce the institutional control and has made provisions to address corrective actions at the site.

SUGGESTED FORMAT

1. Length: not to exceed 10 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 1-2 pages summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

16.1.3 SITE MAINTENANCE & FINANCIAL ASSURANCE

The purpose of the review of the information about the license's site maintenance and financial assurance mechanism is to ensure that adequate arrangements have been made to ensure that the site will be maintained in accordance with the institutional controls described above and that sufficient funds are available to allow an independent third party to assume and carry out responsibilities for any necessary control and maintenance of the site after the NRC has terminated the license.

Regulatory Requirements

10 CFR 20.1403(c)

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 70.38(g)(4)(ii) and 72.54(g)(2)

Regulatory Guidance

DG-4006 "Demonstrating Compliance with the Radiological Criteria for License Termination", Section 4.2

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to fully understand what arrangements for site maintenance and financial assurance mechanism(s) have been provided by the licensee or responsible party. This should include descriptions of how the site maintenance arrangements will ensure that the site will be managed per the institutional controls described above and how the financial assurance mechanism and amount of financial assurance is adequate to allow an independent third party to assume and carry out responsibilities for any necessary control and maintenance of the site after the NRC has terminated the license. The staff's review should verify that the following information is included in the discussion of financial assurance mechanism in the facility decommissioning plan:

- a description of the arrangement or contract with the party charged with carrying out the actions necessary to maintain control at the site;
- a demonstration that the contract or arrangement will remain in effect for as long as feasible, and include provisions for renewing or replacing the contract;
- a description of the manner in which independent oversight of the party charged with maintaining the site will be conducted and what entity will conduct the oversight;
- a description of the authority granted to the third party to perform, or have performed, any necessary maintenance activities;
- unless the party is a government entity, a demonstration that the third party is not the party holding the financial assurance mechanism;
- a demonstration that all records pertaining to official actions and financial payments made by the third party are open to public inspection;
- a description of the periodic site inspections that will be performed by the third party;
- a copy of the financial assurance mechanism provided by the licensee or responsible party³; and,
- a demonstration that the amount of financial assurance provided is sufficient to allow an independent third party to carry out any necessary control and maintenance activities².

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of site maintenance activities and financial assurance mechanisms. The staff should verify that information pertaining to activities associated with maintenance and control the site is consistent with Section 4.2.1 of DG-4006. The staff should verify that information pertaining to the financial assurance mechanism and amount of financial assurance is consistent with the guidance in Section 4.2.2 of DG-4006.

³ Note that the technical review of the acceptability of financial assurance mechanisms is addressed in Section 15 of this SRP. Reviews conducted pursuant to this Section of the SRP are focused on assuring that the licensee or responsible party has provided a financial assurance mechanism that is consistent with the NRC's requirements at 10 CFR 1403(c) and that the amount of financial assurance is appropriate.

Sample Evaluation Findings

The NRC staff has reviewed the information regarding site maintenance and financial assurance in the Decommissioning Plan for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 16 (Restricted Use/Alternate Criteria). Based on this review, the NRC staff has determined that the licensee [insert name] has adequately demonstrated that the site maintenance arrangements and financial assurance mechanism is adequate to ensure that the site will be maintained in accordance with the institutional controls described in the decommissioning plan and that sufficient funds are available to allow an independent third party to assume and carry out responsibilities for any necessary control and maintenance of the site after the NRC has terminated the license.

SUGGESTED FORMAT

1. Length: not to exceed 5 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 1-2 paragraphs summarizing the information in each of the bullets in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

16.1.4 OBTAINING PUBLIC ADVICE

The purpose of the review of the license's description of activities undertaken to obtain advice from the public on institutional controls is to determine if the advice of individuals and institutions in the community who may be affected by the decommissioning has been sought, evaluated, and as appropriate, incorporated into the licensee's or responsible party's decisions following an analysis of the advice.

ACCEPTANCE CRITERIA

Regulatory Requirements

10 CFR 20.1403(d)

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 70.38(g)(4)(ii) and 72.54(g)(2)

Regulatory Guidance

DG-4006 "Demonstrating Compliance with the Radiological Criteria for License Termination", Section 4.3

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to determine whether the licensee or responsible party has adequately sought, managed, and, as appropriate, incorporated, advice from individuals and institutions that may be affected by the decommissioning alternative proposed by the licensee or responsible party.

10 CFR 1403(d)(1) requires that licensees proposing to decommission a site by restricting use of the site shall seek advice from affected parties on whether:

- (1) the provisions for institutional controls will provide reasonable assurance that the total effective dose equivalent distinguishable from background radiation will not exceed 25 mrem/yr;
- (2) the provisions for institutional controls will be enforceable;
- (3) the provisions for institutional controls will not impose an undue burden on the community or other affected parties; and,
- (4) sufficient financial assurance has been provided to enable an independent third party to carry out any necessary control and maintenance activities at the site after license termination.

The staff's review should verify that the following information is included in the discussion of how advice was sought, obtained, evaluated, and as appropriate, incorporated for each⁴ of the issues identified above:

- a description of how individuals and institutions that may be affected by the decommissioning were identified and informed of the opportunity to provide advice to the licensee or responsible party;
- a description of the manner in which the licensee obtained advice from these individuals or institutions;
- a description of how the licensee provided for participation by a broad cross-section of community interests in obtaining the advice;
- a description of how the licensee provided for a comprehensive, collective discussion on the issues by the participants represented;
- a copy of the publicly available summary of the results of discussions, including individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants;
- a description of how this summary has been made available to the public;
- a description of how the licensee evaluated the advice, and the rationale for incorporating, or not incorporating, the advice from affected members of the community into the decommissioning plan.

⁴Note that each of the issues do not need to be addressed separately as long as the information required under the bullets is included for each issue

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the licensee's description of how advice was solicited, obtained, evaluated and as appropriate, incorporated into licensee's or responsible party's decisions and decommissioning plan. The staff should verify that the manner in which advice was sought and obtained and the activities associated with obtaining this advice is consistent with Section 4.3 of DG-4006.

Sample Evaluation Findings

The NRC staff has reviewed the information regarding how advice from individuals and institutions that may be affected by the decommissioning was obtained and summarized in the Decommissioning Plan for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 16 (Restricted Use/Alternate Criteria). Based on this review, the NRC staff has determined that the licensee [insert name] has demonstrated that advice from individuals and institutions that may be affected by the decommissioning was sought, obtained, evaluated, and, as appropriate, incorporated into the licensee's plans for decommissioning its facility in accordance with NRC requirements at 10 CFR 1403(d).

SUGGESTED FORMAT

1. Length: not to exceed 10 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 4-6 paragraphs summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

16.1.5 DOSE MODELING AND ALARA DEMONSTRATION

ACCEPTANCE CRITERIA

The purpose of the review of the license's estimates of doses from the site after termination of the license to verify that the TEDE to the average member of the critical group will not exceed 25 mrem/yr with the institutional controls in place and that the doses are as low as reasonably achievable. The staff's review will also verify that, if institutional controls are no longer in place, there is reasonable assurance that the TEDE to the average member of the critical group from residual radioactive material at the site will not exceed 100 mrem/yr, or 500 mrem/yr provided that the licensee or responsible party:

- demonstrates that further reductions in residual radioactivity necessary to comply with the 100 mrem/yr requirement are not technically achievable, would be prohibitively expensive or would result in net public or environmental harm;
- makes provisions for durable institutional controls (see footnote 2); and,
- provides sufficient financial assurance to enable an independent third party to carry out rechecks at the site no less frequently than every 5 years and to assume and carry out responsibilities for any necessary control and maintenance of the controls at the site.

Regulatory Requirements

10 CFR 20.1403(e)

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 70.38(g)(4)(ii) and 72.54(g)(2)

Regulatory Guidance

Dose Modeling:

DG-4006 "Demonstrating Compliance with the Radiological Criteria for License Termination", Section 1

Section 5 of this SRP

ALARA:

DG-4006 "Demonstrating Compliance with the Radiological Criteria for License Termination", Section 3

Section 7 of this SRP

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to determine whether the residual radioactive material at the site will not result in a TEDE that exceeds 25 mrem/yr with institutional controls in place and is ALARA, or that if institutional controls are no longer in place that there is reasonable assurance that the TEDE to the average member of the critical group will not exceed either 100 mrem/yr or 500 mrem/yr, with conditions. The information should also demonstrate that the financial assurance mechanism(s) are adequate for the site. Finally the information should be adequate to allow the staff to determine if the institutional controls and site maintenance activities are adequate.

The staff's review should verify that the following information is included in the dose modeling/ALARA demonstration subsection of the restricted use section of the decommissioning plan:

- a summary of the dose to the average member of the critical group when radionuclide levels are at the DCGL with institutional controls in place, as well as the estimated doses if they are no longer in place;
- a summary of the evaluation performed pursuant to Section 7 of this SRP demonstrating that these doses are ALARA;
- if the estimated dose to the average member of the critical group could exceed 100 mrem/yr (but would be less than 500 mrem/yr) when the radionuclide levels are at the DCGL, a demonstration that:
 - that further reductions in residual radioactivity necessary to comply with the 100 mrem/yr requirement are not technically achievable, would be prohibitively expensive or would result in net public or environmental harm;
 - provisions for durable institutional controls are in place, and
 - sufficient financial assurance to enable an independent third party to carry out rechecks at the site no less frequently than every 5 years and to assume and carry out responsibilities for any necessary control and maintenance of the controls at the site has been provided.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the dose modeling/ALARA demonstration subsection of the restricted use section of the decommissioning plan. The staff should verify that the TEDE to the average member of the critical group when the radionuclide levels are at the DCGL does not exceed 25 mrem/yr with institutional controls in place and that the licensee estimated the TEDE in accordance with Section 5 of this SRP. The staff should verify that these doses are ALARA and that the licensee has made this evaluation in accordance with the criteria in Section 7 of this SRP. The staff should verify that the TEDE to the average member of the critical group will not exceed 100 mrem/yr when the radionuclide levels are at the DCGL, without institutional controls, and that the licensee or responsible party has estimated the TEDE in accordance with Section 5 of this SRP.

If the TEDE to the average member of the critical group could exceed 100 mrem/yr., without institutional controls, the staff should verify that the TEDE will not exceed 500 mrem/yr and that the licensee or responsible party has estimated the TEDE in accordance with Section 5 of this SRP. The staff should also verify that the licensee has determined that further reductions in residual radioactivity necessary to comply with the 100 mrem/yr requirement are not technically achievable, would be prohibitively expensive or would result in net public or environmental harm in accordance with Sections 3.2, 3.3, and 3.4 of DG-4006. The staff should verify that the institutional controls provided by the licensee or responsible party meet the criteria for a durable institutional controls (i.e., government ownership or responsibility as the third party) in Section 4.1.1.3 of DG-4006. The staff should verify that the licensee or responsible party has provided sufficient financial assurance to enable an independent third party to carry out rechecks at the site at no less than every 5 years. The staff should verify that the amount of financial

assurance is sufficient to assume and carry out responsibilities for any necessary control and maintenance of the controls at the site in accordance with Section 15 of this SRP.

Sample Evaluation Findings

The NRC staff has reviewed the information regarding compliance with 20.1403(e) summarized in the Decommissioning Plan for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 16 (Restricted Use/Alternate Criteria). Based on this review, the NRC staff has determined that the licensee [insert name] has demonstrated that doses to the public from residual radioactive material after the license is terminated should not exceed 25 mrem/yr, with restriction in place or [insert one: 100 mrem/yr if restrictions are reinoved, or 500 mrem/yr, with conditions, if restrictions are removed].

If doses are estimate to be in excess of 100 mrem/yr, but less than 500 mrem/yr with institutional controls removed insert the following:

In addition the licensee [insert name] has demonstrated that further reductions in residual radioactivity necessary to comply with the 100 mrem/yr requirement [select as appropriate: are not technically achievable, are prohibitively expensive, or result in net public or environmental harm]. The licensee has also established durable institutional controls for the site. Finally, the licensee has provided sufficient financial assurance to enable an independent third party to carry out rechecks at the site at no less than every 5 years and the amount of financial assurance is sufficient to assume and carry out responsibilities for any necessary control and maintenance of the controls at the site

SUGGESTED FORMAT

1. Length: 5-7 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 3-5 paragraphs summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

16.2 ALTERNATE CRITERIA

For certain difficult sites with unique decommissioning problems, 10 CFR 20.1404 includes a provision by which the NRC may terminate a license using alternative dose criteria. The NRC expects the use of alternative criteria to be confined to rare situations. This provision was included in 10 CFR 20.1404 because the NRC believed that it is preferable to codify provisions for these difficult sites in the rule rather than require licensees to seek an exemption outside the rule. Under 10 CFR 20.1404, the NRC may consider terminating a license under alternative criteria that are greater than 25 mrem/yr (but less than 100 mrem/yr), but the NRC limits the

conditions under which a licensee could apply to the NRC for, or be granted use of, alternative criteria to unusual site-specific circumstances.

ACCEPTANCE CRITERIA

The purpose of the review of the licensee's discussion of why it is requesting license termination under the Alternate Criteria provisions of 10 CFR 20.1404 is to determine if the licensee or responsible party can demonstrate that the estimated doses to the public from all man-made sources other than medical will be less than 100 mrem/yr and are ALARA, that appropriate restrictions are in place at the site and that the licensee or responsible party has sought, obtained, evaluated and, as appropriate addressed, advice from individuals and institutions that may be affected by the decommissioning in accordance with the criteria in 10 CFR 20.1404.

Regulatory Requirements

10 CFR 20.1404

10 CFR 30.36(g)(4)(ii), 40.42(g)(4)(ii), 70.38(g)(4)(ii) and 72.54(g)(2)

Regulatory Guidance

General:

DG-4003 "Demonstrating Compliance with the Radiological Criteria for License Termination", Section 4.4

Dose Modeling:

DG-4006 "Demonstrating Compliance with the Radiological Criteria for License Termination", Section 1

Section 5 of this SRP

ALARA:

DG-4006 "Demonstrating Compliance with the Radiological Criteria for License Termination", Section 3

Section 7 of this SRP

Information Requirements

The information supplied by the licensee should be sufficient to enable the staff to determine whether the residual radioactive material at the site will result in a TEDE that exceeds 25 mrem/yr, but will not exceed 100 mrem/yr (considering all man-made sources other than

medical), when the radionuclide levels are at the DCGL and is ALARA. The information should also demonstrate that the financial assurance mechanism(s) are adequate for the site. Finally, the information should be adequate to allow the staff to determine if the institutional controls, site maintenance activities and the manner in which advice from individuals or institutions that could be affected by the decommissioning was sought, obtained, evaluated, and, as appropriate, addressed in accordance with NRC requirements. The staff should verify that the following information is included in the discussion of why the licensee or responsible party is requesting license termination under the provisions of 10 CFR 20.1404:

- a summary of the TEDE(s) to the average member of the critical group when the radionuclide levels are at the DCGL (considering all man-made sources other than medical);
- a summary of the evaluation performed pursuant to Section 7 of this SRP demonstrating that these doses are ALARA;
- an analysis of all possible sources of exposure to radiation at the site and a discussion of why it is unlikely that the doses from all man-made sources, other than medical, will be more than 100 mrem/yr;
- a description of the legally enforceable institutional control(s) and an explanation of how the institutional control is a legally enforceable mechanism;
- a description of the restrictions on present and future landowners;
- a description of the parties enforcing and their authority to enforce the institutional control(s);
- a discussion of the durability of the institutional control(s);
- a description of the activities that the party with the authority to enforce the institutional controls will undertake to enforce the institutional control(s);
- the manner in which the party with the authority to enforce the institutional control(s) will be replaced if that party is no longer willing or able to enforce the institutional control(s);
- a description of the duration of the institutional control(s), the conditions that will end the institutional control(s) and the activities that will be undertaken to end the institutional control(s);
- a description of the corrective actions that will be undertaken in the event the institutional control(s) fail;
- a description of the records pertaining to the institutional controls, how they will be maintained and the duration of the post-license termination maintenance period;
- a description of how individuals and institutions that may be affected by the decommissioning were identified and informed of the opportunity to provide advice to the licensee or responsible party;
- a description of the manner in which the licensee obtained advice from these individuals or institutions;
- a description of how the licensee provided for participation by a broad cross-section of community interests in obtaining the advice;
- a description of how the licensee provided for a comprehensive, collective discussion on the issues by the participants represented;
- a copy of the publicly available summary of the results of discussions, including individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants;

- a description of how this summary has been made available to the public; and,
- a description of how the licensee evaluated advice from individuals and institutions that could be affected by the decommissioning and the manner in which the advice was addressed.

EVALUATION FINDINGS

Evaluation Criteria

The staff should verify that the information summarized under "Information Requirements", above is included in the discussion of why the licensee or responsible party is requesting license termination under the provisions of 10 CFR 20.1404. Review of the manner in which doses to the public should be estimated is addressed in Section 5 of this SRP and the staff should refer to Section 5 of this SRP to determine if the dose estimates developed by the licensee or responsible party are acceptable. The evaluation of these doses to determine if they are ALARA is addressed in Section 7 of this SRP and the staff should refer to Section 7 to review the licensee's or responsible party's demonstration the doses are ALARA. The evaluation of the licensee's or responsible party's financial assurance mechanism(s) is addressed above and in Section 15 of this SRP and the staff should refer to these sections to review the financial assurance mechanisms. The evaluation of institutional controls, site maintenance activities and obtaining advice from individual and institutions that could be affected by the decommissioning are addressed in Section 16.1.3 and 16.1.4 of this SRP

Sample Evaluation Findings

The NRC staff has reviewed the information regarding the licensee's [insert name] request to decommission its facility pursuant to 10 CFR 20.1404 summarized in the Decommissioning Plan for the [insert name and (license number) of facility] located at [insert location of facility] according to the NMSS Decommissioning Standard Review Plan, Section 16 (Restricted Use/Alternate Criteria). Based on this review, the NRC staff has determined that the licensee [insert name] has demonstrated that doses to the public from residual radioactive material after the license is terminated should be less than the NRC limits of 100 mrem/yr. and are ALARA. In addition, the licensee has adequately demonstrated that it has provided appropriate restrictions according to the provisions of 10 CFR 20.1403 and has adequately sought, managed and addressed advice from individuals and institutions that may be affected by the decommissioning.

SUGGESTED FORMAT

1. Length: not to exceed 10 pages
2. Physical Specifications: As described in Section 3 of Regulatory Guide 3.65 "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR 30,40, and 70" August 1989.
3. 1-2 pages summarizing each of the items outlined in Acceptance Criteria, above. Licensees are also encouraged to submit the information in electronic format.

This Standard Review Plan (SRP) is being issued in draft form, for comment, to allow interested members of the public to provide input to NRC staff in the early stages of the development of the SRP. The SRP has not yet received complete NRC staff review and approval and does not represent any official NRC positions. After NRC staff has reviewed, evaluated, and, as appropriate, incorporated, all comments submitted by the public on the draft SRP, the staff will issue the SRP in final form.