

ORAL ARGUMENT NOT YET SCHEDULED

DOCKET No. 13-1259

**UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

SHIELDALLOY METALLURGICAL CORPORATION

Petitioner,

v.

UNITED STATES NUCLEAR REGULATORY COMMISSION AND

THE UNITED STATES OF AMERICA,

Respondents.

**ON PETITION FOR REVIEW OF A FINAL ORDER BY
THE UNITED STATES NUCLEAR REGULATORY COMMISSION**

SECOND SUPPLEMENTAL APPENDIX

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NUREG-1757
Vol. 1, Rev. 2

Consolidated Decommissioning Guidance

Decommissioning Process for Materials Licensees

Final Report

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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 that indicating quality trends and the effectiveness of the QA programs will be given to management for review, assessment, corrective action, and follow up.

17.7 RESTRICTED USE

17.7.1 OVERVIEW

NRC staff should review the information supplied by the licensee to determine if the description of the activities undertaken by the licensee is adequate to allow the staff to conclude that the licensee has complied with the requirements of 10 CFR 20.1403 for those licensees who intend to request termination of their radioactive materials licenses using the restricted use provisions of 10 CFR Part 20, Subpart E.

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

The LTR established a system of controls to sustain protection at restricted use or alternate criteria sites. This approach is described in Appendix M. The total system includes the following six elements: (1) legally enforceable institutional controls; (2) engineered barriers; (3) monitoring and maintenance; (4) independent third party oversight; (5) sufficient funding; and (6) maximum limits on dose (i.e., "dose caps") if institutional controls fail. While elements 1, 3, 4, 5, and 6 are required by the LTR, element 2 (engineered barriers) is not required but could be used to mitigate adverse processes (e.g., infiltration or erosion) so that the dose criteria of the LTR can be met (see Section 3.5 of Volume 2 of this NUREG report). The licensee should describe how it proposes to apply the total system approach to its specific site.

The licensee should describe how it has used the risk-informed graded approach (described in Appendix M of this Volume and Section 3.5 of Volume 2 of this NUREG report) to select the appropriate institutional controls and engineered barriers for decommissioning under restricted use or alternate criteria, so that restrictions and engineered barriers are most effectively targeted

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and are based on duration and magnitude of the hazard. This approach is flexible and uses risk insights from dose assessments to tailor site-specific restrictions and engineered barriers that would prevent potential disruptive land uses or natural processes important to compliance with the dose criteria. Appendix M also describes how institutional controls combine with other elements, such as engineered barriers, to form a total system to sustain protection.

If a licensee cannot establish acceptable institutional controls or independent third party arrangements, the licensee may propose one of the two new options involving NRC: an NRC long-term control (LTC) license or an NRC legal agreement and restrictive covenant (LA/RC). Both of these options are described in Appendix M of this Volume and are summarized below. These options are new types of legally enforceable and durable institutional controls established by Commission policy (see SECY-03-0069). These options are not for the purpose of storage of radioactive materials; they are to serve as an institutional control mechanism for restricted use decommissioning. These options should not be considered a guaranteed option for decommissioning, but would be used as a last resort for those sites that could not decommission to unrestricted use levels and could not arrange for other institutional controls. Therefore, these options should not encourage or lead to the proliferation of restricted use sites. In addition, for both of these options, all the restricted use requirements of the LTR must be met, to ensure protection of the public health and safety. Furthermore, NRC is taking measures to prevent future decommissioning problem sites (including reducing the number of future restricted use sites) by considering changes to financial assurance requirements and licensee operations, as described in SECY-03-0069 and RIS-2004-08.

The LTC license option is a possession-only license that would be used to satisfy the LTR requirement for legally enforceable and durable (if needed) institutional controls. The conditions of the LTC license would require the licensee to maintain restrictions on site use and any necessary monitoring, maintenance, and reporting. NRC would use inspections and enforcement, if needed, to assure that the licensee's controls and other activities are effective.

The LA/RC option is a combination of a legal agreement and restrictive covenant that provides a legally enforceable and durable institutional control, with the NRC having an oversight role. Under the LA/RC option, the current licensee or site owner and NRC enter into a legal agreement on the restrictions and controls needed for license termination under restricted conditions. The legal agreement includes using a restrictive covenant, which outlines the restrictions on site use and any necessary maintenance, monitoring, or reporting. In accordance with the legal agreement, the licensee or site owner is required to record the restrictive covenant with the appropriate recordation body in the jurisdiction where the site is located, before the site is released under restricted conditions.

It is noted that the LA/RC option has not been implemented by the NRC or legally tested, and NRC's ability to enforce the LA/RC depends on the laws of the jurisdiction where the site is located. Therefore, the licensee must demonstrate that the LA/RC is a legally enforceable institutional control in the jurisdiction where the site is located.

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If complex monitoring or maintenance activities are needed at a restricted use site, the LTC license could be an appropriate institutional control option (compared to the LA/RC). Under the LTC license option, NRC would need to review and approve the transfer of site ownership (including determining whether the new owner had the technical capability or means to conduct any complex monitoring or maintenance activities), as the new owner(s) would become the LTC licensee to provide the necessary controls outlined in the LTC license. Complex monitoring or maintenance activities could include maintenance of an engineered barrier or groundwater or radiological monitoring activities, which require the site owner to have necessary knowledge, expertise, or technical abilities to carry out these activities and comply with all provisions of the LTC license. If the restrictions on site use or monitoring and reporting activities are simpler, the LA/RC may be an appropriate institutional control option. Simpler restrictions or activities related to the restrictions could include the site owner responding to an annual NRC inquiry as to how the site is being used or allowing the NRC to conduct a periodic inspection of the site.

Figure 17.1 illustrates the process for selecting appropriate institutional controls (including institutional control options involving NRC) for restricted use or alternate criteria decommissioning. Refer to Section 17.8 of this volume for guidance on decommissioning using the alternate criteria provisions in 10 CFR 20.1404. The steps in this process are described below.

1. Determine if the site is a lower or higher risk site, based on the following criteria. (See also Table M.1 and Section M.2 of this volume.)

Lower risk sites (legally enforceable institutional controls):

Shorter hazard duration: shorter dose persistence or shorter radionuclide half-life (less than 100 years).

Lower hazard level: calculated dose is less than 1.0 mSv/y (100 mrem/y) assuming institutional controls are not in place.

Higher risk sites (legally enforceable and durable institutional controls):

Longer hazard duration: longer dose persistence or longer radionuclide half-life (more than 100 years).

Higher hazard level: calculated dose is 1.0–5.0 mSv/y (100–500 mrem/y) assuming institutional controls are not in place.

2. For lower risk sites, determine if legally enforceable institutional controls and independent third party arrangements can be established.

Yes: Licensee can arrange for appropriate legally enforceable institutional controls and independent third party arrangements. The licensee must comply with all LTR requirements in 10 CFR 20.1403 or 10 CFR 20.1404, for license termination under restricted conditions or alternate criteria, respectively.

No: Licensee should document that it could not arrange for legally enforceable institutional controls or independent third party arrangements and may go to step 4

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to select institutional control options involving NRC. The institutional control options involving NRC, which provide legally enforceable and durable institutional controls, may be used, even though durable controls are not necessary for lower risk sites.

3. For higher risk sites, determine if legally enforceable and durable institutional controls, via government (Agency other than NRC) ownership or control, and independent third party arrangements can be established.

Yes: Licensee can arrange for legally enforceable and durable institutional controls and independent third party arrangements. The licensee must comply with all LTR requirements in 10 CFR 20.1403 or 10 CFR 20.1404, for license termination under restricted conditions or alternate criteria, respectively.

No: Licensee should submit a letter from Federal, State, or local government declining to take ownership or control responsibility and may go to step 4 to select institutional control options involving NRC.

4. Determine the appropriate NRC option for providing an institutional control.

LTC license option could be used if:

- Substantial restrictions, monitoring, or maintenance require special expertise (e.g., groundwater monitoring or maintaining an engineered barrier); or
- Maintaining single ownership of a site with both restricted use and unrestricted use areas is desirable to sustain future ownership to ensure long-term protection of public health and safety.

LA/RC option could be used if:

- Current licensee or formerly licensed site owner demonstrates that the LA/RC option would be effective and legally enforceable by NRC in the jurisdiction where the site is located; and
- Restrictions, monitoring, or maintenance activities are simple and do not require special expertise (e.g., annual letter certifying restrictions are in place, fence repair, or sign replacement).

Both the LTC license and LA/RC institutional control options provide legally enforceable and durable (if needed) institutional controls. The licensee must comply with all LTR requirements in 10 CFR 20.1403 or 10 CFR 20.1404, for license termination under restricted conditions or alternate criteria, respectively.

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Demonstrate LTR compliance in the DP: After the above steps are completed and an institutional control option is selected, the licensee would incorporate the option into its DP and demonstrate compliance with all other applicable LTR requirements in 10 CFR 20.1403 or 10 CFR 20.1404, for license termination under restricted conditions or alternate criteria, respectively.

Before preparation and submittal of the DP to NRC, licensees are encouraged to contact NRC or the appropriate Agreement State authority to discuss the selection of appropriate institutional controls (including institutional control options involving NRC) for restricted use or alternate criteria decommissioning.

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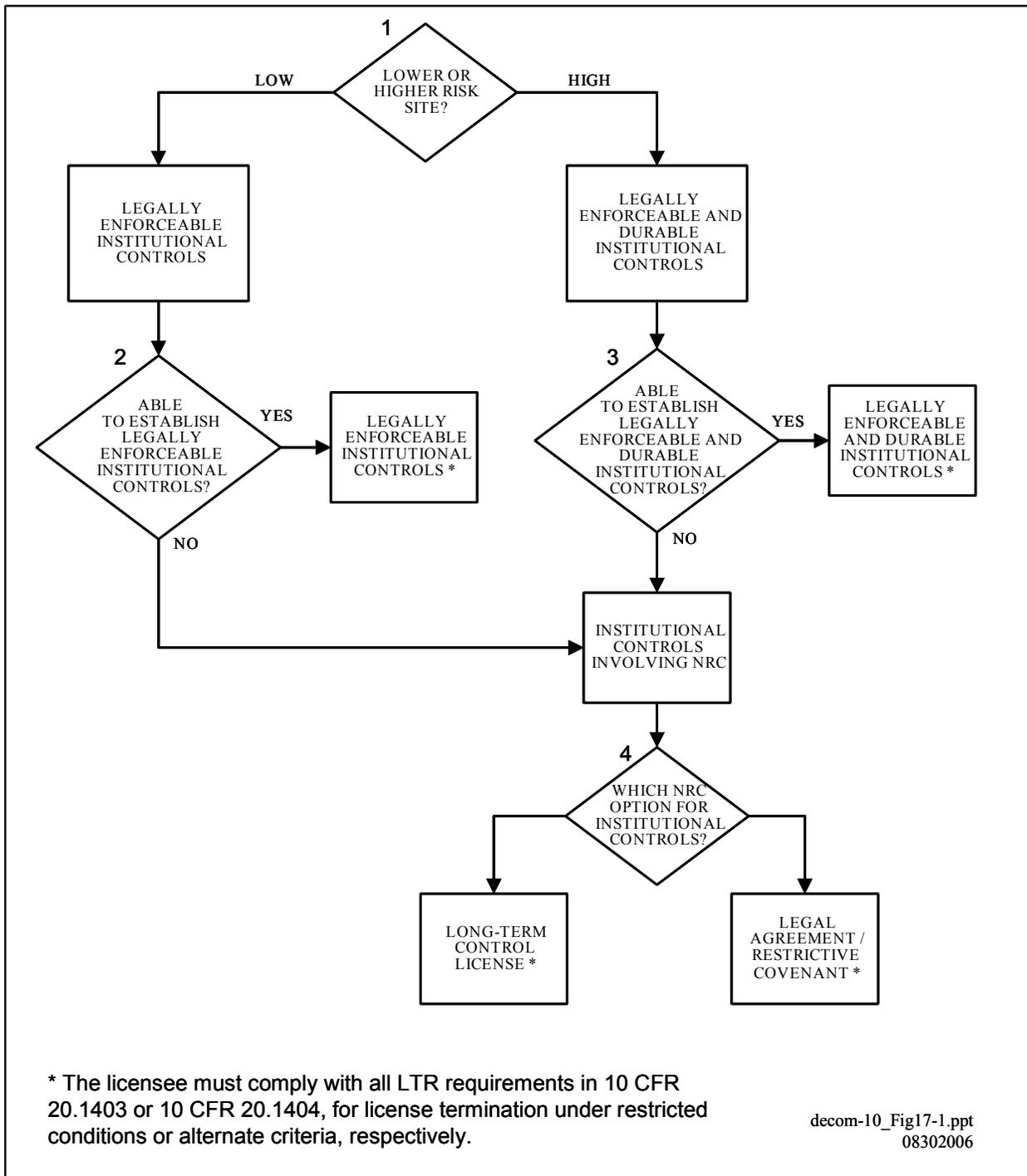


Figure 17.1 Process for Selecting Institutional Controls.

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17.7.2 INITIAL ELIGIBILITY DEMONSTRATION

The purpose of the review of the licensee's demonstration that it is initially eligible to further evaluate release of the site, under the provisions of 10 CFR 20.1403, is to verify that the licensee 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 or environmental harm; or (2) are not being undertaken because the residual radioactivity levels are ALARA.

ACCEPTANCE CRITERIA: INFORMATION TO BE SUBMITTED

The information supplied by the licensee should be sufficient to allow 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 or environmental 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 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 (see Volume 2 of this NUREG series); or
- A demonstration that the proposed residual radioactivity levels at the site are ALARA.

EVALUATION FINDINGS: EVALUATION CRITERIA

If the licensee 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 versus costs of further remediation using the guidance in Chapter 6 and Appendix N of Volume 2 of this NUREG series. In considering the net public and environmental harm, a licensee's evaluation should consider the radiological and nonradiological impacts of decommissioning on a person that may be impacted, as well as the potential impact on ecological systems from decommissioning activities. (See Section B.3.2 of the "Statements of Consideration" for the License Termination Rule, 62 FR 39069.)

If the licensee has concluded that further reductions in residual radioactivity levels are not required because they are ALARA, the staff should verify that the licensee has considered all of the applicable benefits and costs of further reduction of residual radioactivity and accurately calculated the benefits and costs using the methodology described in Chapter 6 and Appendix N of Volume 2 of this NUREG series.

17.7.3 INSTITUTIONAL CONTROLS AND ENGINEERED BARRIERS

The purpose of the review of the description of the institutional controls and engineered barriers the licensee has provided for the site is to determine if the licensee has made provisions for

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legally enforceable institutional controls that will limit the dose to the average member of the critical group to less than 0.25 mSv/y (25 mrem/y).

ACCEPTANCE CRITERIA: INFORMATION TO BE SUBMITTED

The information supplied by the licensee should be sufficient to allow the staff to fully understand what institutional controls and engineered barriers the licensee plans to use or 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 0.25 mSv/y (25 mrem/y).

In the NRC's view, engineered barriers are distinct and separate from institutional controls (NRC 2002). Used in the general sense, an engineered barrier could be one of a broad range of barriers with varying degrees of durability, robustness, and isolation capability. Generally, engineered barriers are passive, man-made structures or devices intended to enhance a facility's ability to meet the dose criteria in the LTR. Engineered barriers are usually designed to inhibit water from contacting waste, limit releases of radionuclides (e.g., through groundwater, biointrusion, erosion), or to mitigate doses for inadvertent intruders. Institutional controls are used to limit inadvertent intruder access to, and/or use of, the site to ensure that the exposure from the residual radioactivity does not exceed the established criteria. Institutional controls include legal mechanisms (e.g., land use restrictions) and may include, but are not limited to, physical controls (e.g., signs, markers, landscaping, and fences) to control access to the site and minimize disturbances to engineered barriers.

NRC reviewers and licensees should refer to Section 3.5 of Volume 2 of this NUREG series for guidance on engineered barriers. Section 3.5 provides guidance on the engineered barrier analysis process, including analysis of: (a) contribution of engineered barriers towards compliance, with institutional controls in place, including monitoring and maintenance; and (b) contribution of engineered barriers toward compliance, assuming loss of institutional controls (including monitoring and maintenance) and degradation of barriers. The guidance also discusses the main elements that support the assessment of engineered barrier performance, including: (a) design and functionality of engineered barriers, including interactive effects (both positive and negative) from the implementation of multiple barriers; (b) technical basis for design and functionality of engineered barriers; (c) degradation mechanisms and sensitivity analysis; (d) uncertainty in design and functionality of engineered barriers; (e) suitability of numerical models; (f) model support; and (g) quality assurance.

The licensee should summarize the total system of controls used to provide protection and include a general description of each system element and how it contributes to protection. Elements might include institutional controls, engineered barriers, monitoring and maintenance; independent third party oversight; trust fund; and maximum limits on dose (i.e., "dose caps") assuming institutional controls fail. Refer to Appendix M of this Volume, which describes this total system approach and apply the approach for the specific site. The staff's review should verify that the following information is included in the description of institutional controls that the licensee plans to use or has provided for the site:

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Area and Type of Institutional Controls

- Area and description of the general type of institutional controls and the basis for selection, using NRC's risk-informed graded approach in Appendix M of this Volume. Using this approach, determine if the restricted area of the site is a lower or higher risk area and the general type of institutional controls that are needed. Consider both hazard duration, based on the dose persistence and the half-life of radionuclides, as well as hazard level [i.e., less than or greater than 1.0 mSv/y (100 mrem/y)] based on dose assessments assuming controls are no longer in effect. For a simpler site, the complete area of the current site would be restricted use. For a more complex site, this approach might result in identifying unrestricted use areas where no institutional controls are required, and restricted use areas using either legally enforceable institutional controls or durable and legally enforceable institutional controls.
- A demonstration that the size of the restricted use area has been minimized. The staff considers that minimizing the size of the restricted use area would contribute to demonstrating ALARA for sites that are considering subdividing the site into unrestricted and restricted use portions. It would also result in a smaller area to control, which may make access limitations like fencing and surveillance simpler and thus more effective.

When determining what portion of the site needs to be restricted (or how a site could be subdivided between restricted and unrestricted portions), the licensee should consider and balance the goal of minimizing the restricted area of the site (and minimizing burdens associated with restricted use) with defining the area that will ensure long-term protection. Risk insights from dose assessments (extent of residual radioactivity and how it migrates/travels through the environment) will help determine what areas need to be monitored and the location and size of the restricted area.

For a licensee considering an LTC license that has both restricted and unrestricted use areas of its site, the licensee should evaluate and choose whether to: (a) keep both restricted use and unrestricted use areas together under single ownership and LTC license; or (b) release the unrestricted use areas of the site while maintaining the restricted use areas under the LTC license. The licensee should consider and demonstrate how its choice will enhance long-term protection of public health and safety, through maintenance of the site controls and restrictions. For example, for a privately owned site, where the restricted use area has little or no resale value but the unrestricted use area does have resale value, keeping both areas together under an LTC license could maintain the value for the entire site and thus sustain future ownership. However, keeping both areas together could result in undue burdens at some sites. Thus, both benefits and burdens should be evaluated, considering the views of affected parties. See Appendix M of this volume for further discussion of this choice and the flexibility for partial restricted release (i.e., release of unrestricted use areas while maintaining restricted use areas under an LTC license). The licensee should show the boundaries of both the restricted use area(s) and the unrestricted use area(s) in its DP.

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- A description of the specific type of legally enforceable institutional control(s) and an explanation of how the institutional control is a legally enforceable mechanism.

If such controls cannot be arranged, provide justification for appropriateness of using either the LTC license or LA/RC options:

- durable institutional controls are required; and
- licensee was unable to establish other types of legally enforceable institutional controls or independent third party arrangements (e.g., letter from the State declining responsibility).

For the LTC license, state that two specific types of institutional controls would be used. First, describe that the NRC LTC license is considered to be a specific type of legally enforceable and durable institutional control. Second, describe the licensee's responsibility to put in place and maintain a deed notice that notifies potential landowners of the LTC license requirement and the conditions of the LTC license.

Use the following criteria to decide when the LTC license or LA/RC would be appropriate:

LTC license could be used if:

- Substantial restrictions, monitoring, or maintenance require special expertise (e.g., groundwater monitoring, use of an engineered barrier);
- Maintaining single ownership of a site with both restricted use and unrestricted use areas is desirable to sustain future ownership to ensure long-term protection of public health and safety.

LA/RC option could be used if:

- Current licensee or formerly licensed site owner demonstrates that the LA/RC option would be effective and legally enforceable by NRC in the jurisdiction where the site is located; and
- Restrictions, monitoring, or maintenance activities are simple and do not require maintaining special expertise (e.g., annual letter certifying restrictions are in place, fence repair, sign replacement).

Restrictions and Controls Implemented by Licensee

- A description of the restrictions on present and future landowners;

Describe the access and land use restrictions, based on the dose assessments assuming no controls. Identify specific access and land use scenarios that would lead to non-compliance with the dose criteria of the LTR and therefore should be prohibited (e.g., farming, construction of a residence, excavation into the cell for any purpose, or groundwater use).

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Indicate what access and land uses might be permitted (e.g., industrial, recreational, or wildlife conservation area).

Describe what restrictions on land use would be needed to maintain effective engineered barrier performance (e.g., prohibit excavation of the cell cap and removal of cell cap material or contaminated material), as well as permitted access and land use.

Describe the licensee's activities to restrict/control access and land use, including use of fences, signs, monuments, and periodic surveillance (e.g., annual site surveillance and adverse event surveillance).

If the LTC license or LA/RC is used, all of the above should be conditions in the LTC license or LA/RC. For the LTC license option, the licensee should prepare a Long-Term Control Plan that describes the details of how the licensee will implement the LTC license conditions.

- A discussion of the durability of the institutional control(s);

Explain how the controls selected are durable based on the risk-informed graded approach.

Note that NRC considers both the LTC license and LA/RC to be durable institutional controls.

Duration of the Institutional Controls

- A description of the duration of the institutional control(s), the basis for the duration, the conditions that will end the institutional control(s) and the activities that will be undertaken to end the institutional control(s).

For the LTC license and LA/RC, discuss that the duration of these controls is as long as needed, but could be permanent for a site with long half-life radionuclides, such as uranium and thorium. However, the LTC license would be renewed at least every 5 years for the purpose of evaluating continued effectiveness and maintaining institutional and public awareness and information transfer. The appropriate renewal time period would be determined when establishing the LTC license for a specific site and could be adjusted in the future.

Under the LTC license, further flexibility is provided for a licensee to request, in the future, approval for removing the residual radioactivity, terminating the license, and releasing the site for unrestricted use. For this approach, a licensee would submit a decommissioning plan for NRC review, as is currently done, and decommission the site in accordance with NRC's decommissioning regulations. NRC would assure that the site was properly decommissioned and suitable for unrestricted release, before terminating the LTC license. NRC would also allow a request to terminate the LTC license and release

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the site with restrictions using another acceptable type of legally enforceable or, if needed, durable institutional control and independent third party arrangement, if approved by NRC.

Records Retention and Availability

- A description of the records pertaining to the institutional controls, how and where will they will be maintained, and how the public will have access to the records.

For the LTC license, identify both historical and new records to be retained by the licensee that are necessary for the licensee to provide effective long-term protection. This includes the decommissioning plan, final status survey report, LTC license, long-term control plan, and all correspondence under the LTC license. Identify the location and methods used for retention of records by the licensee. Note that NRC will retain all licensing records as part of its agency recordkeeping system and that these records will be available to the public in the future, as they are today.

For the LA/RC, identify both historical and new records to be retained by the site owner that are necessary for the site owner to provide effective long-term protection, including the decommissioning plan, final status survey report, legal agreement (site owner at time of license termination), restrictive covenant, and correspondence between NRC and the site owner. Note that NRC has the primary responsibility for maintaining records and making those available to the public, as part of its Agency recordkeeping system. In accordance with the legal agreement, the licensee or site owner would be required to record the restrictive covenant with the appropriate recordation body responsible for maintaining records related to land ownership (e.g., Registrar of Deeds) in the jurisdiction where the site is located. These recordkeeping responsibilities should be outlined in the legal agreement and restrictive covenant.

Detriments Associated With Institutional Controls

- A description of any detriments or potential drawbacks associated with the maintenance of the institutional control(s). Detriments could result from restricted use of the land, independent of the type of legal instrument used for institutional controls. Include any applicable stakeholder inputs or advice, if provided.

For the LTC license, describe any detriments to using the LTC license option. For example, describe potential impacts on sale of property or value of property due to the NRC license or perceptions that NRC could potentially require further cleanup in the future (i.e., lack of finality).

EVALUATION FINDINGS: EVALUATION CRITERIA

The staff should determine whether the information summarized in “Information to be Submitted,” above satisfies the criteria summarized below. The application of the criteria below

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is dependent on the circumstances of the case. In each case, the staff should consult with the Office of the General Counsel on the application of the criteria and the sufficiency of the licensee's proposal.

A. For legally enforceable institutional controls on privately owned land:

Proprietary institutional controls on privately owned land, including LA/RC, should:

- Be enforceable against any owner of the affected property and any person that subsequently acquires the property or acquires any rights to use the property.
- Be enforceable by entities, other than the landowner, that have the legal authority to enforce the restriction. For LA/RC, the legal authority to enforce the restriction would be with the NRC.
- Be developed based on considerations of how durable the controls need to be.
- Include provisions to replace the entity with authority to enforce the restriction.
- Indicate actions the entity with authority to enforce the restrictions may take.
- Remain in place for the duration of the time they are needed.
- Have appropriate funds set aside.
- Be appropriately recorded, including in the deed and in land records, as appropriate.
- Include a legal opinion by an attorney specializing in real estate law, who is knowledgeable in the particular State and local land use laws, that demonstrates:
 - The property law of the particular State and locality in which the land is located ensures that the particular instrument selected will accomplish its intended purpose.
 - The restrictions have been reviewed and their validity affirmed for the locality.
 - The owner of the affected property (i.e., the possessor of the land) can be compelled to abide by the terms of the land use restriction.
 - The restrictions are binding on future owners (possessors) of the land (i.e., they should “run with the land”).
- Include a legal opinion that the entity with the right to restrict the land's use and the responsibility to enforce the restriction has the legal authority to do so and is someone other than the owner or possessor of the land in question.
- Include a demonstration that the entity (or entities) with authority to enforce the restrictions have the knowledge, capability, and willingness to do so, and are appropriate for the specific situation.
- Include a demonstration that the institutional control is durable enough to provide an adequate level of protection of public health and safety and the environment for the amount of residual

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radioactivity remaining on the site. Use the risk-informed graded approach described in Appendix M of this Volume.

- Include a provision to replace the entity with authority to enforce the restriction if that entity is no longer willing or able to enforce the restriction.
- Clearly state the actions that the parties with authority to enforce the restrictions may take to keep the restrictions functioning (e.g., monitoring of deed compliance, control and maintenance of physical barriers).
- Include a demonstration that the restrictions will remain in place for the duration that they are needed, including periodic re-recording of the restrictions.
- If restrictions will end, the conditions that would end the restriction must be clearly stated, and the procedures for canceling or amending the restriction should be readily available. There should be no provisions in the restriction or in the land use law of the local jurisdiction that would cause the restrictions to end while they are still needed to protect the public.
- Identify corrective actions to be taken in case the restrictions need to be broken. For example, a no-excavation restriction may need to be broken if a water main under the site bursts and must be repaired.
- Include a demonstration that the information about restrictions is recorded in the deed and in land records and will contain:
 - a legal description of the property affected;
 - the name or names of the current owner or owners of the property as reflected in public land records;
 - identification of the parties that can enforce the restriction (i.e., own the rights to restrict use of the land);
 - the reason for the restriction, the nature of the radiation hazard, including the estimated dose if institutional controls fail, and that this restriction is established as a condition of license termination by NRC pursuant to 10 CFR 20.1403;
 - a statement describing the nature of the restriction, limitation, or control created by the restriction;
 - the duration of the restriction;
 - permission to install and maintain physical controls, if any are used; and,
 - the location of copies of the important records related to the decommissioning of the site and license termination under restricted conditions.
- For LA/RC, identify the reasons that the LA/RC is an appropriate option for institutional controls, given the criteria in “Area and Type of Institutional Controls” in Section 17.7.3.

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B. For legally enforceable institutional controls on government owned land:

NRC may accept government ownership of land as a method to enforce controls on land use and to meet the legally enforceable institutional control requirements in 10 CFR 20.1403(b) and (e). Government ownership will generally be acceptable when the dose to an average member of the critical group could exceed 1.0 mSv (100 mrem) per year (but be less than 5.0 mSv (500 mrem) per year) if the institutional controls were no longer in effect. In reviewing restrictions involving government ownership of land, NRC staff should ensure that the restriction will remain in place for the entire time they are needed and that the nature of the controls and restrictions on the land are clearly stated in a publicly available legal record. Depending on the government entity involved, consider as appropriate the items under part A, above.

C. For institutional controls based on sovereign or police powers:

Institutional controls that are based on sovereign or police powers generally consist of zoning or other restrictive requirements. The permissibility and effectiveness of governmental controls at a particular site will depend on the applicable State and local law.

Institutional controls based on sovereign or police powers should:

- Include a legal opinion by an attorney specializing in real estate law who is knowledgeable in the particular State and local land use laws that verifies the following:
 - Zoning and other restrictive requirements have been reviewed and their validity affirmed.
 - They are binding on present and future owners of the land.
- Include a demonstration that the government agency imposing the zoning or restriction will assume responsibility for enforcing the restriction.
- Include a demonstration that the restrictions will remain in place for the entire time that they are needed or the conditions that can cause them to be changed.
- Include a demonstration that the restrictions or zoning requirements are clear to current and future owners of the land, local and State governments, and others, as appropriate, through public documents, notification, placement in land records, and so forth. Such documentation should include an indication of the activities allowable and the residual radioactivity remaining onsite.

D. For institutional controls based on NRC LTC license:

For the LTC license, identify the reason that the LTC license is an appropriate option for durable institutional controls, given the criteria in Section 17.7.3.

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17.7.4 SITE MAINTENANCE AND LONG-TERM MONITORING

The purpose of the review of the information about the licensee's long-term monitoring and site maintenance program is to ensure that: (1) adequate arrangements have been made to ensure that the site will be maintained in accordance with the institutional controls described above, and that (2) the licensee has an adequate arrangement to ensure that an independent third party can assume and carry out responsibilities for any necessary control, monitoring, and maintenance of the site after NRC has terminated the license. Criteria for evaluating the licensee's mechanism to ensure that sufficient funds are available to allow an independent third party to assume and carry out responsibilities for any necessary control, monitoring, and maintenance of the site after NRC has terminated the license, are addressed in Part II of Volume 3 of this NUREG series.

ACCEPTANCE CRITERIA: INFORMATION TO BE SUBMITTED

The information supplied by the licensee should be sufficient to allow the staff to fully understand what arrangements for long-term monitoring and site maintenance have been provided by the licensee. 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 an independent third party will assume and carry out responsibilities for any necessary control and maintenance of the site after NRC has terminated the license.

The licensee should describe the long-term monitoring and maintenance activities. Under the LTC license, these would be required by the license conditions. Note that a Long-Term Control Plan would be developed before license amendment for the LTC license option, which would include the detailed plans and procedures for restrictions on access and use, long-term monitoring, and maintenance. For the LA/RC option, any monitoring and maintenance activities would be required by the provisions of the LA/RC. Note that the LA/RC option should be used only if there are no complex monitoring and maintenance activities that would require expertise to carry out. The staff's review should verify that the following information is included in the discussion of the site maintenance program in the facility DP:

Long-term Monitoring

- A description and basis for the long-term monitoring program, using the risk-informed graded approach. This approach consists of combining the prohibited access and land uses that could lead to non-compliance (see Section 17.7.3) with the human and natural disruptive processes for engineered barriers (see Section 17.7.3 of this volume and Section 3.5.2 of Volume 2) to form one list of disruptive human and natural processes which could lead to non-compliance and should be the focus of monitoring and maintenance.

For these disruptive processes, identify how each would be monitored, including type of monitoring (e.g., visual surveillance of fence integrity, visual surveillance for indicators of disruptive erosion such as gullies; radiological monitoring of groundwater or surface water; visual surveillance of disruptive vegetation intrusion into an engineered barrier/cover) and how each type would be used to detect indicators or precursors of the

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disruptive process, either in the environment surrounding the engineered barrier or the engineered barrier itself. Also, include and justify the location, frequency, and duration of monitoring. Duration of monitoring should be determined by considering several site-specific factors such as nature of disruptive processes; time needed to reduce uncertainty in barrier performance; and barrier degradation rates. Thus, duration and amount of monitoring should be risk-informed. For example, little or no long-term monitoring might be needed for lower risk sites, sites without disruptive processes important to compliance, or sites with low uncertainty in the engineered barrier performance over the time needed. In contrast, monitoring would be needed for higher risk sites, sites with disruptive processes, or if there is high uncertainty with engineered barrier performance.

Maintenance

- A description of the site maintenance program and the basis for concluding that the program is adequate to control and maintain the site.

The following risk-informed approach should be used for determining the maintenance that is needed, which consists of identifying the disruptive process important to compliance, describing the maintenance that would provide corrective actions to mitigate the disruptive process, and how monitoring information would be used to identify the need and appropriate type of maintenance.

The risk-informed approach for maintenance also would be applied to engineered barriers, if they are used. For higher risk sites where robust barriers are designed so their performance does not rely on active ongoing maintenance, monitoring and maintenance should still be planned, particularly, for disruptive events that could lead to non-compliance or where there is higher uncertainty. This approach provides added confidence through redundancy and defense-in-depth, as described in Appendix M for the total system.

For the LTC license and LA/RC, the maintenance activities would be conditions of the LTC license or LA/RC. For the LTC license, the detailed plans and procedures to implement the conditions would be included in the Long-Term Control Plan.

- A demonstration that an appropriately qualified entity has been provided to control and maintain the site.

Under the LTC license, the entity could be the licensee or a contractor to the licensee. Describe the qualifications of the personnel that are necessary to conduct the planned LTC activities.

- If the licensee plans on using a contractor, a description of the arrangement or contract with the entity charged with carrying out the actions necessary to maintain control at the site.

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- If the licensee plans on using a contractor, 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 plans for corrective actions that may be undertaken in the event the institutional control(s) fail.
- A description of the plans for corrective actions that may be undertaken in the event the site maintenance and control program fails.

Identify reasonably foreseeable events (e.g., forced entry through fences or disruption of cap material) that could cause a failure of access and land use controls. Describe the corrective actions the licensee would take and the requirement that NRC would be notified of the events and planned corrective actions.

- A description of licensee reporting to NRC and State and local officials, including an annual report and event corrective actions reports, as needed. The annual report should describe licensee surveillance and routine maintenance. Event corrective action reports would identify the adverse event that occurred and the licensee's planned corrective actions. Follow-up reports would include a summary of the results of the corrective actions taken, an analysis of lessons learned from the event, and plans to prevent similar future events from occurring.

Enforcing Institutional Controls

- A description of the entities enforcing, and their authority to enforce, the institutional control(s);

For the LTC license, specify that NRC will have jurisdiction for oversight of licensee activities and can take enforcement actions, if needed, under its licensing authority from the AEA. NRC's general role under the LTC license is to assure that the controls are maintained and remain protective over time. Also note that NRC activities would include review, inspection, license renewal, and enforcement.

For the LA/RC, specify that NRC is responsible for (1) assuring that the site owner is complying with the LA/RC, and (2) taking actions to enforce the LA and RC (e.g., legal action in the courts), if the conditions of these legal tools are not met. The LA/RC, when written for a specific site, would describe the methods and frequency in which NRC (as the enforcing party) would monitor the site to verify the effectiveness of controls. Outline how the NRC would enforce the restrictions, and if the LA or RC were breached, what steps NRC would take to restore these instruments (and the land use restrictions, monitoring, or reporting actions they contain).

- A description of the activities that the entity with the authority to enforce the institutional controls may undertake to enforce the institutional controls;

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This is not applicable for the LTC license option. Under the LA/RC option, the legal agreement and restrictive covenant should outline the activities in which NRC may undertake to enforce the controls.

- A description of the manner in which independent oversight of the entity charged with maintaining the site will be conducted and what entity will conduct the oversight.

For the LTC license and LA/RC, the above item is not applicable, because NRC is the entity that will conduct the oversight.

- A description of the periodic site inspections that will be performed by the third party, including the frequency of the inspections.

This is not applicable for the LTC license option. Under the LA/RC option, the legal agreement and restrictive covenant should outline any necessary details of the periodic site inspections NRC will perform, including the frequency of the inspections.

- A description of the manner in which the entity with the authority to enforce the institutional control(s) will be replaced if that entity is no longer willing or able to enforce the institutional control(s) (this may not be needed for Federal or State entities);

For the LTC license and LA/RC, the above item is not applicable, because NRC is the enforcing party.

Sufficient Financial Assurance

For the purposes of a LTC license and LA/RC, “sufficient” financial assurance, pursuant to 10 CFR 20.1403(c), is an amount that will (1) enable an independent third party to assume and carry out responsibilities for any necessary control and maintenance of the site, (2) provide for trust fund expenses, (3) provide for NRC fees applicable to the site, and (4) provide a 25% contingency factor. The financial assurance instrument used will be a trust fund with sufficient capital to cover the cost estimate. The cost estimate, trust agreement, and the trustee must be approved by NRC.

To develop the cost estimate, refer to NUREG-1757, Volume 3, which contains guidance on developing the cost estimate for long-term site control and maintenance. Once the amount is estimated, the licensee must provide sufficient funds to produce an annual average income that covers the annual surveillance, control, and maintenance/repair costs, NRC fees, and trustee expenses. By analogy to uranium mill tailings funds, a 1% rate of return may be used by the licensee to determine the minimum funding level. This rate would contribute to the LTR requirement for sufficient funds for a site with long-lived radionuclides needing control over a long time period. It is also justified because the current licensee responsible for the contamination should fund the long-term control so that no additional costs will be passed on to future site owners/licensees.

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The cost estimate should include costs for at least the following activities:

- site surveillance of access and land use restrictions;
- maintenance;
- radiological monitoring of surface and groundwater, if needed and non-radiological monitoring of processes
- reporting; and
- records retention.

For the LTC license, the cost estimate should also include NRC oversight fees. The fees given below are in 2005 dollars and should be adjusted for inflation. To adjust for inflation, use the ratio of the cost of professional staff hours found in 10 CFR 170.20. In 2005, the staff-hour cost for NMSS was \$197 per hour. In 2005, NRC fees in 2005 dollars are as follows:

- a fee of \$10,000 for one inspection and one report each year; and
- \$20,000 every 5 years for 5 year license renewal, inspection, and report.

For the LA/RC option, the cost estimate should include the above NRC oversight fees for periodic inspections (at a frequency/interval based on site-specific considerations). The cost estimate should also include fees for NRC review of the property laws in the jurisdiction where the site is located at the time site ownership changes (or at least every five years), to assure that the local laws still support the enforceability of the restrictive covenant.

Finally, the estimate should include reasonable trustee fees and expenses.

NUREG-1757 Volume 3 provides for a contingency factor of 25% to be added to the cost estimate. This contingency should be retained to buffer against potential market losses and to provide for unexpected costs. If the contingency proves insufficient, the licensee should add funds to the trust. As a matter of fairness, particularly in light of the long term existence of the fund, if the balance substantially exceeds the amount needed to produce sufficient annual income, a provision, to return excess funds to the licensee with NRC's approval, should be included in the trust.

Under the LTC license, further flexibility is provided for a future licensee to request approval for removing the residual radioactivity, terminating the license, and releasing the site for unrestricted use. For this approach, a licensee would submit a decommissioning plan for NRC review, as is currently done, and decommission the site in accordance with NRC's decommissioning regulations. NRC would assure that the site was properly decommissioned and suitable for unrestricted release, before terminating the LTC license. The trust fund does not have to include sufficient funds to clean the site to unrestricted release; the future site owner would need to independently cover this cost. NRC would also allow a request to terminate the LTC license and release the site with restrictions using another acceptable type of legally

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enforceable and, if needed, durable institutional control and independent third party arrangement, if approved by NRC.

Independent Third Party

- a description of the authority granted to the third party (including NRC under the LTC license or LA/RC options) to perform, or have performed, any necessary maintenance activities;
- unless the entity is a government entity, a demonstration that the third party is not the entity holding the financial assurance mechanism (this is not applicable for the LTC license or LA/RC options as NRC is the beneficiary of the financial assurance mechanism);
- a demonstration that sufficient records evidencing to official actions and financial payments made by the third party (including NRC under the LTC license or LA/RC) are open to public inspection.

EVALUATION FINDINGS: EVALUATION CRITERIA

The staff should determine whether the information summarized under “Information to be Submitted,” above satisfies the criteria summarized below. The application of the criteria below is dependent on the circumstances of the case. In each case, the staff should consult with the Office of the General Counsel on the application of the criteria and the sufficiency of the licensee’s proposal.

The entity to control and maintain the site may be the former licensee, the landowner, a governmental agency, an organization, a corporation or company, or occasionally a private individual. Control and maintenance of a site does not necessarily have to be carried out by an independent third party. The entity should be capable of carrying out its responsibilities and should be appropriate given the nature of the restrictions in place. The entity could be a contractor to the entity that holds the rights to restrict use of the property. Note that government control and/or ownership is generally appropriate for higher risk sites involving large quantities of uranium and thorium contamination and for those sites where the potential dose to the public could exceed 1.0 mSv/y (100 mrem/y) if institutional controls fail. See Appendix M for the risk-informed graded approach.

The maintenance and control program includes detailed descriptions of: (1) the repair/replacement and maintenance program for the site; (2) if appropriate, an environmental monitoring program, including the duration of the monitoring, who will be informed of the results, action levels and what action will be taken if the action levels are exceeded; and (3) the mechanism to detect and mitigate the loss of site controls; the mechanism to, if necessary, inform local emergency responders of the loss of controls.

An arrangement or contract is in place to carry out any actions necessary to maintain the controls so that the annual dose to the average member of the critical group does not exceed 0.25 mSv (25 mrem). The arrangement or contract should be for as long a time as is feasible, and there

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should be provisions for renewing or replacing the contract to be consistent with the duration of the restrictions. The arrangement may include oversight of the entity by a government entity or the courts.

A mechanism is in place to replace the entity controlling/maintaining the site if that becomes necessary. Replacement may be specified in the agreement with the conditions under which a government, the courts, or other entity can replace the entity.

The entity is authorized to either perform the necessary work to maintain the controls or to contract for the performance of the work. The entity would need the authority to contract for the necessary work, review and approve the adequacy of the work performed, replace contractors if necessary, and authorize payment for the work.

The entity performing the site control and maintenance should not hold the funds itself; that is to say, the entity should not serve as the provider of financial assurance (e.g., escrow agent, trustee, issuer of letter of credit). However, if the entity is a government, the licensee may elect to allow the government to hold the funds.

A demonstration that sufficient records evidencing the official actions of and financial payments made by the entity are open to public inspection.

The entity has the responsibility to perform periodic rechecks of the site no less frequently than every 5 years [if required by 10 CFR 20.1403(e)(2)(iii)] to ensure that the institutional controls continue to function. The periodic rechecks should include an onsite inspection to verify that prohibited activities are not being conducted and that markers, notices, and other physical controls remain in place.

Under the LTC license option, NRC would review and renew the LTC license every five years. Under the LA/RC option, NRC would review the property laws in the jurisdiction where the site is located at the time site ownership changes (or at least every five years), to assure that the laws of the jurisdiction where the site is located still support the enforceability of the restrictive covenant.

17.7.5 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 that may be affected by the decommissioning has been sought, evaluated, and as appropriate, incorporated into the licensee's decisions following an analysis of the advice.

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ACCEPTANCE CRITERIA: INFORMATION TO BE SUBMITTED

The information supplied by the licensee should be sufficient to allow the staff to determine whether the licensee 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.

10 CFR 20.1403(d)(1) requires that licensees proposing to decommission a site by restricting use of the site shall seek advice from affected parties on whether:

- The provisions for institutional controls will provide reasonable assurance that the TEDE distinguishable from background radiation will not exceed 0.25 mSv/y (25 mrem/y).
- The provisions for institutional controls will be enforceable.
- The provisions for institutional controls will not impose an undue burden on the community or other affected parties.
- Sufficient financial assurance has been provided to allow 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 each 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;
- 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 of 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 the advice, and the rationale for incorporating, or not incorporating, the advice from affected members of the community into the DP.

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EVALUATION FINDINGS: EVALUATION CRITERIA

The staff should verify that the information summarized under “Information to be Submitted,” above, is included in the licensee’s description of how advice was solicited, obtained, evaluated and as appropriate, incorporated into the licensee’s decisions and DP. The staff should verify that the manner in which advice was sought and obtained and the activities associated with obtaining this advice are consistent with the criteria in Sections 17.7.5. and M.6 of this volume.

17.7.6 DOSE MODELING AND ALARA DEMONSTRATION

The purpose of the review of the licensee’s estimates of doses from the site after termination of the license to verify that the dose to the average member of the critical group will not exceed 0.25 mSv/y (25 mrem/y) with the institutional controls in place required by 10 CFR 20.1403(b) and that the doses are as low as reasonably achievable. The staff’s review should also verify that, if institutional controls are no longer in place, there is reasonable assurance that the dose to the average member of the critical group from residual radioactive material at the site will not exceed either 1.0 mSv/y (100 mrem/y), or 5.0 mSv/y (500 mrem/y) required by 10 CFR 20.1403(e), provided that the licensee:

- demonstrates that further reductions in residual radioactivity necessary to comply with the 1.0 mSv/y (100 mrem/y) requirement are not technically achievable, would be prohibitively expensive, or would result in net public or environmental harm;
- makes provisions for durable institutional controls; and
- provides sufficient financial assurance to allow an independent third party to carry out rechecks at the site no less frequently than every five years and to assume and carry out responsibilities for any necessary control and maintenance of the controls at the site.

ACCEPTANCE CRITERIA: INFORMATION TO BE SUBMITTED

The information supplied by the licensee should be sufficient to allow the staff to determine whether the residual radioactive material at the site will not result in a TEDE that exceeds 0.25 mSv/y (25 mrem/y) 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 1.0 mSv/y (100 mrem/y) or 5.0 mSv/y (500 mrem/y), with conditions. The information should also demonstrate that the financial assurance mechanism(s) are adequate for the site (See Section 17.7.4). Finally, the information should be adequate to allow the staff to determine if the institutional controls and site maintenance activities are adequate.

In conducting dose assessments, the licensee should identify realistic exposure scenarios assuming past, present, and reasonably foreseeable (i.e., that are likely within the next 100 years) land uses (as described in Chapter 5 of Volume 2 of this NUREG series). Note that the 100 years described here is only a timeframe for estimating future land uses; the licensee must evaluate

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doses that could occur over the 1000-year time period specified in the LTR. Included in the assumption that the institutional controls are no longer in place, the licensee should assume that there is no maintenance and no repair of engineered barriers (if used), and as a result, should analyze how the engineered barrier might degrade over time, for example, due to erosion or biointrusion.

If a licensee proposes that a portion of its site be released for unrestricted use, then the total dose from all portions of the site must meet the applicable dose criteria. Therefore, dose assessments for both restricted and unrestricted use portions of the site are needed and also must take into consideration the impact of the other portion of the site — impacts of the restricted use portion on the unrestricted use portion (e.g., the potential for future contaminated groundwater to migrate into the unrestricted area) and impacts of the unrestricted portion on the restricted use portion.

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 DP:

- a summary of the dose to the average member of the critical group 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 Chapter 6 and Appendix N in Volume 2 of this NUREG series demonstrating that these doses are ALARA. ALARA analyses should also use the more realistic scenario approach to identify reasonably foreseeable land uses;
- if the estimated dose to the average member of the critical group could exceed 1.0 mSv/y (100 mrem/y), but would be less than 5.0 mSv/y (500 mrem/y):
 - a demonstration that further reductions in residual radioactivity necessary to comply with the 1.0 mSv/y (100 mrem/y) 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 has been provided to allow 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.

EVALUATION FINDINGS: EVALUATION CRITERIA

The staff should verify that the information summarized under "Information to be Submitted," above, is included in the dose modeling/ALARA demonstration subsection of the restricted use section of the DP. The staff should verify that the dose to the average member of the critical group does not exceed 0.25 mSv/y (25 mrem/y) with institutional controls in place and that the licensee estimated the dose in accordance with Chapter 5 of Volume 2 of this NUREG series. The staff should verify that these doses are ALARA and that the licensee has made this evaluation in accordance with the criteria in Chapter 6 and Appendix N of Volume 2 of this NUREG series. The staff should verify that the dose to the average member of the critical group will not exceed

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1.0 mSv/y (100 mrem/y), without institutional controls, and that the licensee has estimated the dose in accordance with Chapter 5 of Volume 2 of this NUREG series.

If the dose to the average member of the critical group could exceed 1.0 mSv/y (100 mrem/y), without institutional controls, the staff should verify that the dose will not exceed 5.0 mSv/y (500 mrem/y) and that the licensee has estimated the dose in accordance with Chapter 5 of Volume 2 of this NUREG series. The staff also should verify that the licensee has determined that further reductions in residual radioactivity necessary to comply with the 1.0 mSv/y (100 mrem/y) requirement are not technically achievable, would be prohibitively expensive or would result in net public or environmental harm in accordance with Chapter 6 and Appendix N of Volume 2 of this NUREG series. The staff should verify that the institutional controls provided by the licensee meet the criteria for a durable institutional controls (i.e., government ownership or control or responsibility as the third party). The staff should verify that the licensee has provided sufficient financial assurance to allow an independent third party to carry out rechecks at the site no less than every five 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 in Part II of Volume 3 of this NUREG series.

17.8 ALTERNATE CRITERIA

For certain difficult sites with unique decommissioning problems, 10 CFR 20.1404 includes a provision by which NRC may terminate a license using alternate dose criteria. NRC expects the use of alternate criteria to be limited to rare situations. This provision was included in 10 CFR 20.1404 because NRC believed that it was 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, NRC may consider terminating a license under alternate criteria that are greater than 0.25 mSv/y (25 mrem/y) [but less than 1.0 mSv/y (100 mrem/y)] with restrictions in place, but NRC limits the conditions under which a licensee could apply to NRC for, or be granted use of, alternate criteria to unusual site-specific circumstances.

The guidance in Section 17.7 for restricted use sites, including the risk-informed graded approach and use of new institutional control options involving NRC (i.e., LTC license and LA/RC), also applies to selecting the appropriate institutional controls for sites proposing to decommission using alternate criteria in 10 CFR 20.1404.

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 can demonstrate that the estimated doses to the public from all man-made sources other than medical will be less than 1.0 mSv/y (100 mrem/y) and are ALARA, that appropriate restrictions are in place at the site and that the licensee 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.