RESULTS OF EVALUATIONS FOR THE RELATIONSHIP BETWEEN LTR RELEASE LIMITS AND THE UNIMPORTANT QUANTITIES LIMIT UNDER 10 CFR 40.13(a)

1. BACKGROUND:

There is a potential inconsistency between the dose allowed for unrestricted release by the License Termination Rule (LTR) in 10 CFR 20.1402, and the resulting dose if 10 CFR 40.13(a) were used as a decommissioning criterion, and the appropriate relationship between the two regulations is not clear. The staff noted this potential inconsistency to the Commission in SECY-01-0194, "AAR Manufacturing Group, Inc., and Proposed Use of Unimportant Quantities of Source Material in 10 CFR 40.13(a) as Decommissioning Criteria." SECY-01-0194 described AAR Manufacturing Group, Inc.'s (AAR's) proposed use of unimportant quantities of source material, in 10 CFR 40.13(a), as a decommissioning criterion.

In a June 18, 2002, Staff Requirements Memorandum (SRM), the Commission approved the staff's proposal to deny AAR's request and require AAR to return to its approved remediation plan [consistent with the Site Decommissioning Management Plan (SDMP) Action Plan criteria], meet the terms of the LTR voluntarily, or be subject to license, under which the LTR would be applicable. The SRM also directed the staff to "... evaluate the appropriate relationship between 10 CFR 40.13(a) and [the LTR] with particular emphasis on identifying any potential inconsistencies." The staff has interpreted this direction in a broad sense and is evaluating this relationship as a generic issue for any licensee (as the staff's recommendation to deny AAR's proposal and the Commission's associated direction in SRM-SECY-01-0194 were specific to AAR, which is a formerly licensed site).

2. ISSUE DESCRIPTION AND DESIRED OUTCOME:

2.1 Issue: There is a potential inconsistency between the dose constraint of 0.25 milliSievert per year (mSv/yr) [25 millirem per year (mrem/yr)] for unrestricted release in the LTR and the resulting dose if 10 CFR 40.13(a) were used as a decommissioning criterion, and the appropriate relationship between the two regulations is not clear. The doses associated with matter containing less than 0.05 percent by weight (wt%) source material can exceed the public dose limit of 1 mSv/yr (100 mrem/yr), and thus exceed the 0.25 mSv/yr (25 mrem/yr) dose constraint for unrestricted release in the LTR.

10 CFR 40.42(k) specifies the determinations that the Commission must make to terminate a source material license. These determinations include a demonstration that the site is suitable for release in accordance with the criteria in the LTR. The radiological criteria for unrestricted use in 10 CFR 20.1402 state that a site will be released for unrestricted use if the residual radioactivity results in a total effective dose equivalent not to exceed 0.25 mSv/yr (25 mrem/yr). Since the definition of "residual radioactivity" means radioactivity resulting from activities under the licensee's control and includes radioactivity from all licensed and unlicensed sources used by the licensee, then the licensee must meet this dose criterion for unrestricted release even if it has to remediate soils or materials that are less than 0.05 wt% source material.

In potential conflict with the LTR is 10 CFR 40.13(a), which states, "Any person is exempt from the regulations in this part and from the requirements for a license set forth in section 62 of the Act to the extent that such person receives, possesses, uses, transfers or delivers source material in any chemical mixture, compound, solution, or alloy in which the source material is by weight less than... 0.05 percent of the mixture, compound, solution or alloy." One interpretation of this regulation is that matter that contains less than 0.05 wt% source material (from licensed activities) remains part of the licensee's inventory of licensed material and does not become an "unimportant quantity of source material" until it is transferred to a person exempt from licensing requirements under 10 CFR 40.13(a) (i.e., a non-licensee). Also, the less than 0.05 wt% material left on site after decommissioning is considered residual radioactivity that is subject to the LTR. The other interpretation of 10 CFR 40.13(a) is that the licensee would be exempt from licensing under 10 CFR Part 40 if it removes from its site all matter that contains 0.05 wt% source material and greater. It follows that if the licensee becomes exempt from Part 40, the LTR would no longer apply.

2.2 Desired Outcome: The staff's desired outcome in the evaluation of this issue is to define and clearly describe the appropriate relationship between the LTR and 10 CFR 40.13(a) or resolve or eliminate the inconsistency between the regulations, if possible.

3. EVALUATIONS OF RELEVANT INFORMATION:

To define the appropriate relationship between the LTR and 10 CFR 40.13(a) and resolve the inconsistency between the two regulations, the staff considered the following cases and activities: the AAR proposal to use 10 CFR 40.13(a) as a decommissioning criterion (as laid out in SECY-01-0194); the ongoing Part 40 rulemaking for "Transfers of Certain Source Materials by Specific Licensees"; and the work of the Interagency Jurisdictional Working Group.

3.1 AAR's Proposed Use of 10 CFR 40.13(a) as Decommissioning Criterion (SECY-01-0194)

As noted above, SECY-01-0194 detailed AAR's proposal for use of 10 CFR 40.13(a) as a decommissioning criterion. AAR's opinion is that no further remedial action is required for soils that contain thorium in concentrations less than 0.05 wt% source material, as AAR asserted that this material is exempt from regulation, under 10 CFR 40.13(a).

The staff provided the reasoning for its opinion that 10 CFR 40.13(a) is not an appropriate decommissioning criterion, and that license termination and site release require that the criteria of the LTR must be met. The staff recommended that AAR's proposal be denied, arguing that AAR's decommissioning approach was inconsistent with the LTR and the SDMP Action Plan criteria, and that approval of AAR's approach would be inconsistent with the staff's general practice of holding non-licensees, with sites contaminated by licensed activities, to the same requirements of licensees. The staff also noted that if decommissioning is based on the percent of source material rather than a dose standard, a question arises as to whether it is permissible to reduce the concentration of source material in contaminated soils by adding clean soil to it.

In SRM-SECY-01-0194, the Commission approved the staff's proposal to deny AAR's request and require AAR to return to its approved remediation plan (consistent with the SDMP Action Plan criteria), meet the terms of the LTR voluntarily, or be subject to license, under which the

LTR would be applicable. Following the Commission's direction, the staff notified AAR, by letter dated August 9, 2002, of the U.S. Nuclear Regulatory Commission's (NRC's) decision that 10 CFR 40.13(a) was not an appropriate decommissioning criterion for the site and that AAR's decommissioning proposal had not been approved.

It is reasonable to expect that the staff opinions and arguments presented in SECY-01-0194 would extend to any site (licensed or formerly licensed, that was contaminated with source material from licensed activities) that proposed use of 10 CFR 40.13(a) as a decommissioning criterion.

3.2 Part 40 Rulemaking for "Transfers of Certain Source Materials by Specific Licensees"

Also in SECY-01-0194, the staff discussed the Commission's direction in the March 9, 2000, SRM on SECY-99-259, "Exemption in 10 CFR Part 40 for Materials Less than 0.05 Percent Source Material - Options and Other Issues Concerning the Control of Source Material." In SRM-SECY-99-259, the Commission directed the staff to initiate the development of a proposed rule to require prior Commission approval for transfers to persons exempt under 10 CFR 40.13(a), including transfers for the purposes of permanent disposal. The staff believed that the Commission's direction addressed transfer for the purposes of *off-site* disposal, such as at an industrial solid waste disposal facility or a hazardous waste disposal facility, and did not address *on-site* disposal [i.e., use of 10 CFR 40.13(a) as a decommissioning criterion]. To address this issue, the staff recommended in SECY-01-0194 that the proposed rule language and accompanying statement of considerations (SOC) be clarified to specify such "off-site" disposal.

In SRM-SECY-01-0194, the Commission approved the clarification in the proposed rule language and the accompanying SOC (as presented in SECY-00-0201, "Proposed Rule - 10 CFR Part 40 Amendments to Require NRC Approval for Transfers from Licensees to Exempt Persons,") to specify "disposal in an appropriate facility."

Based on the Commission's direction, the staff added language to the SOC of the proposed rule, which clarified NRC's intent that 10 CFR 40.13(a) not be used for on-site disposal [i.e., 10 CFR 40.13(a) should not be used as a decommissioning criterion].

> As part of this proposed rule, the Commission is also proposing to amend § 40.13(a) by adding the word "disposes" to the list of exempted activities in § 40.13(a). This addition would clarify the exemption's applicability to disposal. However, it should be noted that any **on-site disposal by a licensee of mixtures of material containing under 0.05 percent by weight (that was derived from its licensed material) source material is not addressed by § 40.13(a)** [emphasis added]. Any such disposal would continue to require approval under 10 CFR 20.2002 and be subject to reevaluation under the Decommissioning Timeliness Rule, 10 CFR 40.42 and the License Termination Rule, 10 CFR Part 20, Subpart E.

This proposed rule for "Transfers of Certain Source Materials by Specific Licensees" was published in the Federal Register on August 28, 2002 (67 FR 55175). The comment period for the proposed rule ended on November 12, 2002. The staff has reviewed the public comments received and is currently working to resolve the comments, to finalize this rule. As there were

no comments on this specific language, it is expected that this language would continue in the SOC for the final rule.

3.3 Interagency Jurisdictional Working Group

In SRM-SECY-99-259, the Commission directed the staff to initiate interactions and work with specified Federal agencies and the States to "... explore the best approach to delineate the responsibilities of the NRC and these agencies with regard to low-level source material (as defined in 10 CFR Part 40) or materials containing less than 0.05 percent uranium and/or thorium." The staff established an Interagency Jurisdictional Working Group (JWG) composed of representatives from the specified Federal agencies and the States. Since its establishment, the JWG has identified and examined a number of issues associated with 10 CFR 40.13(a), including problems involving inconsistency with NRC regulations [e.g., inconsistency between 10 CFR 40.13(a) and LTR].

As noted in an August 13, 2002, memorandum to the Commission, as a result of the JWG efforts, the staff is considering an approach to limit NRC authority to uranium and thorium that are purposely extracted or used. The staff will provide its analysis and recommendations regarding this issue in a separate Commission paper. The Commission should refer to the JWG paper for the staff's proposed recommendation, which requests approval to continue to evaluate the implementation of the JWG's recommended approach to limit NRC authority to uranium and thorium that are purposely extracted or used. The implementation of such proposal may include eliminating the exemption in 10 CFR 40.13(a), thus removing the inconsistency between the LTR and 10 CFR 40.13(a).

4. EVALUATION OF OPTIONS:

The staff's desired outcome in the evaluation of this issue is to define and clearly describe the appropriate relationship between the LTR and 10 CFR 40.13(a) or resolve/eliminate the inconsistency between the regulations, if possible. The staff believes that the above examples and considerations define the appropriate relationship between the LTR and 10 CFR 40.13(a) by demonstrating that 10 CFR 40.13(a) should not be used as decommissioning criterion, and that the LTR should.

In that regard, it should also be noted that the exemption in 10 CFR 40.13(a) stems from regulations adopted approximately 40 years ago, and the 0.05 wt% concentration appears to have been chosen on the basis of the concentration of source material that is necessary to be a useful source of fissionable material. The LTR was developed to provide specific radiological criteria for decommissioning, while the concentration in 10 CFR 40.13(a) was not developed or intended for this purpose. As noted in Section 3.3 above, the JWG has explored approaches to delineate the responsibilities of the NRC and various agencies with regard to low-level source material; the Commission should refer to the JWG Commission paper for a comprehensive discussion of the issues surrounding 10 CFR 40.13(a).

In reference to clearly describing the relationship and/or resolving the inconsistency between the two regulations, the staff believes that a resolution of the inconsistency is not a possibility at this time. As mentioned earlier in this paper, the staff is still considering the JWG's recommended approach to limit NRC authority to uranium and thorium that are purposely extracted or used.

The staff recognizes that implementation of this approach could include eliminating the exemption in 10 CFR 40.13(a). Although elimination of the exemption in 10 CFR 40.13(a) would obviously eliminate the inconsistency between 10 CFR 40.13(a) and the LTR, the staff does not believe this is a current possibility because: (1) the work of the JWG is driven by many other factors besides that of the LTR inconsistency; (2) the approval and the feasibility of implementing the JWG's recommendation are uncertain at this time; (3) if the staff recommends that the JWG recommendation be implemented and the Commission approves this approach, there are many more steps that need to be completed before any such rulemaking to eliminate the exemption in 10 CFR 40.13(a) could be implemented. If any of these steps are not successful, the recommendation may not ultimately be implemented; and (4) if the JWG recommendation is ultimately implemented, it will be a lengthy process.

Therefore, since the resolution of the inconsistency is not a current possibility, the staff proposes two options, regarding this issue: (1) Clarify NRC's policy that 10 CFR 40.13(a) should not be used as a decommissioning criterion, or (2) No action.

4.1 Clarify NRC's policy that 10 CFR 40.13(a) should not be used as a decommissioning criterion

Under this option, the staff would explain the appropriate relationship between 10 CFR 40.13(a) and the LTR in a regulatory information summary (RIS) that is readily available to wide ranges of stakeholders. The RIS would explain NRC's policy that 10 CFR 40.13(a) is not an appropriate decommissioning standard, and that the LTR provides the proper criteria for license termination.

Pros:

Although this relationship has been explored and addressed in several contexts (e.g., SECY-01-0194, 10 CFR 40.51 proposed rule, and the JWG), including clarification in a RIS could help to increase public confidence, as (1) a RIS has a broad distribution, and the overall LTR Analysis RIS would have high visibility, and (2) NRC's policy on this issue would be clearly established in one medium.

Clarifying the relationship between the LTR and 10 CFR 40.13(a) in a readily available public document would support NRC's performance goal of making the NRC activities and decisions more effective, efficient, and realistic, as it will clearly define NRC's policy on the issue, and thus alleviate future efforts of dealing with the issue.

The RIS could be prepared in a timely fashion, making it available for public and licensee use in the near term.

Cons:

Publishing NRC's policy in a RIS will not directly resolve the inconsistency. Although it is NRC's practice or policy that 10 CFR 40.13(a) is not an appropriate decommissioning criterion, the regulatory inconsistency between the LTR and 10 CFR 40.13(a) will remain unless the regulation is changed.

4.2 No Action

Under this option, the staff would not complete any actions to clarify the relationship between the LTR and 10 CFR 40.13(a). The staff would continue to evaluate any proposals for use of 10 CFR 40.13(a) as a decommissioning criterion, on a case-by-case basis, taking into consideration the Commission's direction on AAR and any Commission direction associated with this paper.

Pros:

The staff would not need to prepare a RIS for this issue.

Cons:

As mentioned earlier, the relationship between the LTR and 10 CFR 40.13(a) has been explored and addressed in several contexts (e.g., SECY-01-0194, 10 CFR 40.51 proposed rule, and the JWG). As the staff believes that these previous examples and considerations help define the appropriate relationship between the LTR and 10 CFR 40.13(a), it does not appear to be an effective and efficient use of resources to repeatedly continue to consider this issue on a case-by-case basis.

5.0 RECOMMENDATIONS:

As the elimination or resolution of the inconsistency between the LTR and 10 CFR 40.13(a) is not a current possibility, the staff recommends approval of Option 1 to clarify NRC's policy that 10 CFR 40.13(a) should not be used as a decommissioning criterion. This option could be implemented in a RIS.