UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 31 1999

OFFICE OF
AIR AND RADIATION

Mr. Carl J. Paperiello, Director
Office of Nuclear Material Safety and Safeguards
Mail Stop 8 A23
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Paperiello:

Thank you for the opportunity to comment formally on the Nuclear Regulatory Commission (NRC) Draft Regulatory Guide DG-4006 "Demonstrating Compliance with the Radiological Criteria for License Termination" which would implement specific parts of the NRC regulation 10 CFR Part 20 Subpart E "Radiological Criteria for License Termination." EPA staff have been working with NRC staff through the ISCORS cleanup subcommittee to discuss a number of these comments.

The Environmental Protection Agency (EPA) has expressed major concerns with the NRC license termination regulation on numerous occasions, such as the letter from Administrator Browner to then Chairman Jackson, February 7, 1997. In addition to EPA's concerns with NRC's decommissioning regulation, we also have major concerns with the Draft Regulatory Guide, and they fall within the following areas: 1) NRC would release sites under restricted release conditions but would take no responsibility for long term oversight to ensure that restrictions remain in place; 2) inadequate public input and involvement; and 3) failure to acknowledge state standards, such as ground water standards. Each of these concerns is summarized below, and explained in greater detail in the attachment.

- NRC would release sites under restricted release conditions but would take no responsibility for long term oversight to ensure that restrictions remain in place: NRC's Draft Regulatory Guide states for sites released with radioactivity remaining on site such that restrictions are needed to meet radiation protection limits to the public, "The NRC no longer regulates or oversees the site, except in circumstances indicated in 10 CFR 20.1401(c)" and ". . . NRC will not be involved in the continued functioning of the institutional controls while they are in effect." EPA is concerned that NRC would no longer regulate or oversee radioactivity from a licensed activity that remains at a site under restricted conditions. For similar types of sites with

similar types and levels of contamination which fall under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), the President of the United States is required by the Statute to review the sites no less often than each 5 years to assure that human health and the environment are being protected by the remedial actions implemented. While NRC does not have to copy the CERCLA requirement, it clearly has a responsibility to ensure the long term maintenance of institutional controls. NRC's role to protect the health and safety of the public against radiation hazards should not be delegated to anyone but a government entity with the necessary knowledge, resources, and authority to enforce the institutional controls. Instead, in the Draft Guide, NRC assumes that for restricted release sites, local governments, civic groups, local community groups, conservation organizations, or adjacent land owners not only enforce restrictions but also have the ability to restore controls should that become necessary. Finally, EPA is also concerned that the guidance for funding provided in the Regulatory Guide will not provide any or enough money for these potentially significant radiation protection responsibilities, especially if there is a need to restore failed controls or develop new controls.

- Inadequate public input and involvement: NRC should promote the use of public meetings and public comment for significantly more sites than just sites being released for restricted release. This is especially important for sites with complex issues or sites with a history of handling large amounts of radioactive materials that are released for unrestricted use. In addition, NRC should promote the use of a publically available record for sites to enhance public participation.

- Failure to acknowledge state standards, such as ground water standards: While the NRC has, unfortunately, decided not to protect ground water to MCLs, it still has a responsibility to ensure that its licensees do not violate state law during decommissioning. The NRC Regulatory Guide should acknowledge the existence of state ground water standards and provide a framework for complying with those standards or provide a mechanism for states to enforce them against licensees before the license is terminated. In addition, if MCL levels are exceeded because of formerly licensed radioactivity, or could ever be exceeded, the NRC should provide a process for informing and involving the public. This notice would inform people that they do or may need to treat ground water before drinking it, in order to meet drinking water standards. This notification would acknowledge the public's right to know the existing or potential contaminants in their drinking water, a right recognized in the Safe Drinking Water Act.

Specific comments on the Draft Regulatory Guide are attached. We would be pleased to discuss the Agency's concerns in greater detail, or to explore alternative approaches that you may wish to suggest. Please contact Larry Weinstock at 202 564-9290 if you have any questions.

Sincerely,

Laurence Weinstock for

Stephen D. Page, Director
Office of Radiation and Indoor Air

Enclosure

U. S. Environmental Protection Agency Comments[1]
NRC Draft Regulatory Guide DG-4006 (August 1998)

I. NRC would release sites under restricted release conditions but would take no responsibility for long term oversight to ensure that restrictions remain in place:

Section 4 of NRC's Draft Regulatory Guide is titled "License Termination under restricted Conditions". In order to have restricted release, a site must have "legally enforceable institutional controls that would limit dose to the average member of the critical group." Section 4 goes on to say "*The NRC no longer regulates or oversees the site*, except in circumstances indicated in 10 CFR 20.1401(c)" and A "Except in these circumstances, *NRC will not be involved in the continued functioning of the institutional controls while they are in effect.*" (emphasis added) The Draft Regulatory Guide then states the enforcer could be state or local governments that have responsibility for public health and safety or organizations such as civic groups, local community groups, conservation organizations, adjacent land owners, or other persons potentially impacted. (Section 4.1.3.2) At a minimum, this should be revised to state that only a responsible government entity with sufficient expertise, resources and enforcement authority should be allowed to carry out the periodic checks. It is unclear why the NRC would no longer regulate or oversee radioactivity from one of its licensees that remains at a site under restricted conditions in those situations where the NRC has determined that effective institutional controls are necessary to protect the health and safety of the public.

In Section 4.1.3.2, the Draft Regulatory Guide does not require that any of these groups that would enforce controls to have sufficient resources, expertise, or authority to carry out this task. Since Section 4.1.1.3 of the Draft Regulatory Guide states that doses could be as high as 100 mrem or even 500 mrem annually should the institutional controls fail, it appears that there is a clear need for continued government oversight. In addition, we don't see how NRC can give up regulatory jurisdiction, if not involvement, in a situation where enforcement action may be necessary to ensure long term protection of the public. In similar situations, under CERCLA, EPA reviews sites every five years to ensure that controls are in place.

Under Draft Regulatory Guide, five year reviews are only required by the NRC only in situations when residual contamination from the site provides a dose in excess of 100 mrem/yr. Five year reviews should be required for all sites under restricted conditions. The NRC should revise its regulations and Draft Regulatory Guide to require five year reviews for all sites released under restricted release. The regulations and Draft Regulatory Guide should also require reviews for sites released under 10 CFR 20.1402 (unrestricted use) where some type of institutional control mechanisms are required or credit is taken for their existence (e.g., zoning)

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in order to meet radiation protection dose limits. Only in this way can the public be assured that current and future generations will receive the protection intended in decommissioning decisions.

In Section 4.1.3.2, the Guide states that there is one party that both restricts the land and enforces the controls. We see no reason why it must be the same party doing both jobs. In fact, there seems to be some advantage in having the function split between two different organizations. The most important thing is that the organization(s) doing both tasks be fully qualified and motivated to perform that task.

II. Inadequate public input and involvement.

EPA believes that the Guide does not provide sufficient opportunity for public comment and involvement. The Guide focuses its public requirements on the licensee and fails to ensure that the affected communities will have an opportunity to make informed comments on actions that are very significant in a community. These are issues which the public has a right to be involved in. The only section requiring NRC to seek public comment is Section 4.3, and that section applies only to license termination under restricted conditions. However, there are sites, especially those that involve complex issues affecting human health and the environment, which have many of the same kinds of needs for public input and input by other government and tribal organizations as those being proposed for restricted release. The Draft Regulatory Guide should be amended to include the kinds of public participation such as those outlined in NRC's documents[2] for a wider set of sites beyond just those proposed for restricted release.

Section 2.12 of the Draft Regulatory Guide states that only records showing the results of surveys and calibrations must be maintained, and only for three years. The NRC does not require that a comprehensive system of records be maintained for each of its sites. EPA recommends that this section of the Draft Regulatory Guide be expanded to address a comprehensive system of records. This record system should contain all documents which form the basis for selection of a license termination action, and the record system would also act as a vehicle for public participation in selecting a license termination action. Depending on the size and complexity, documents in the record for each site could include the following or equivalent: preliminary assessment documents, site investigation documents, remedial investigation work plans, decommissioning plans, NRC and licensee correspondence, inspection reports, sampling data, and the community relations plan. The record should be a compilation of documents related to the selection of the response action; it should include documents that form the bases for the decision, whether or not they support the response selection; and it should be an explanation of

[2]The NRC's "Public Involvement in the Nuclear Regulatory Process" at http://www.nrc.gov/OPA/gmo/tip/publicin.htm and the NRC's "Strategic Plan".

the basis for the selection of the response action[3]. Furthermore, as NRC moves to its Agency wide Documents Access Management System (ADAMS) system, the formats for electronic submittals should be specified for these licensee records such that the public can read them all of them without having to purchase special software.

These problems flow from a fundamental concern EPA has with the NRC process. The current process does not provide clear, early decision points for a wide range of sites which allow for public involvement and public understanding of what has been decided. Too many documents are submitted to the NRC and the public doesn't know whether or not they are approved. We believe that from a public involvement standpoint, it would improve the NRC process if there was at least one major document describing the site selected remedy and ultimate level of residual contamination. Ideally, NRC would propose and approve, approve with comments, or disapprove the document and take public comment on the proposal and make a decision on the record.

III. Failure to acknowledge state standards, such as ground water standards.

The Draft Regulatory Guide should acknowledge the existence of state ground water standards and provide a framework for working with those standards. Even if NRC is unwilling to enforce MCLs, it should clearly acknowledge the right of states to protect their own drinking water supplies. If NRC does not want to enforce ground water standards, it should provide a simple and efficient way of working with state governments so they can do so. It will be much more costly and burdensome if a state must come in after the NRC has decommissioned a site and require ground water cleanup.

In addition, if MCL levels are or will ever be exceeded because of the licensed radionuclides, the NRC should provide a process for informing and involving the public, local government, and public water systems that could be using the water. The NRC should also play a role as a catalyst for helping to resolve the problems that might result. This notification should be early enough so that the public, local government, and public water systems can be involved in discussions of the remedy selection. This notification would acknowledge the public's right to know the existing or potential contaminants in their drinking water, a right recognized in the Safe Drinking Water Act.

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[3]While not every license terminated may justify the need for a record or the degree of greater public notification and participation recommended, criteria that would justify them would include factors such as radionuclide(s) of concern, half life, radioactivity from licensed operations off-site, whether radioactivity from licensed operations will remain on the site after license termination, whether land use assumptions impact selection of cleanup levels or remedial actions, whether radioactivity will remain in inaccessible areas of buildings, and whether there is or will be contamination from any licensed radionuclide in the soil or ground water.

The Draft Regulatory Guide should address state ground water programs, such as Comprehensive State Ground Water Protection Programs.

IV. Other comments.

EPA has a number of concerns regarding the cleanup of subsurface contamination.

The Draft Regulatory Guide should discuss the use of a directed planning process and specifically the likelihood and the consequences of decision error or errors. This information can be used as the basis for establishing the quantity and quality of data needed to support a decision. The Draft Regulatory Guide also does not link subsurface contamination to future land use scenarios. The Draft Regulatory Guide should address the use of restricted conditions when dealing with subsurface contamination. What restrictions are placed on a site to prevent elevated subsurface contamination from being excavated and placed on the surface?

In addition, the Draft Regulatory Guide should reference the development of a conceptual site model which would assist the licensee, public, other government agencies, and NRC in understanding the level of knowledge that is available and the potential health and environmental significance of the subsurface contamination. Specifically, for subsurface contamination the measurement of the area and depth of contamination and average concentration is needed. Because current investigation techniques and statistical methods cannot accurately determine mean concentration of subsurface without a costly and intensive sampling program, conservative assumptions are typically used. NRC should define how these assumptions will be developed in the Draft Regulatory Guide.

In Section 1.2 of the Draft Regulatory Guide, NRC deals with the issue of the minimum justification for the use of default scenarios and parameters. The guidance states that a licensee needs to state that no conditions are reasonably expected to exist at the site outside those incorporated in the default scenarios and modeling assumptions that would cause a significant increase in the calculated dose. NRC should require an external verification process, such as public comment or peer review, to confirm the licensee statement. (This is another example of the use of public involvement.)

In Section 1.3 and 1.4, there is no discussion of peer review, technical review, or independent technical review for using other than the recommended parameters, scenarios, or computer models. The Draft Regulatory Guide should be revised to address these concerns.

In Section 1.4, the licensee is asked to provide the NRC sufficient information to allow review of the model, scenarios, and parameters if the licensee is to use other computer models. The Draft Regulatory Guide should state this information should be provided (or the list of references cited) to the public and other government agencies as well, such as including them or

referencing them through the system of records and enhanced public participation recommendations.

Section 2.1 (page 6 next to last paragraph) references the use of MARSSIM survey methods. The Draft Regulatory Guide should clarify which MARSSIM survey methods the NRC is referring to.

Section 2.10.4, which deals with piping and embedded piping, should address restricted use scenarios and five year reviews.

In Section 2.11.1, the Draft Regulatory Guide should address what happens if there are significant gaps in the historical site assessment records, such as no records.

In Sections 2.11.1 and .3, which deal with sub-surface residual radioactivity and paved parking lots, the Draft Regulatory Guide should clarify what percentage or ratio of mixing can occur when mixing uncontaminated material with residual radioactivity beneath the surface. Also, it is not clear how or if the subsurface contamination is related to future land use scenarios or to restricted release conditions, so the Draft Regulatory Guide should be revised to address these concerns.

In Section 2.11.4, the text discusses the condition that "radioactivity may have reached potable water". What about the case when radioactivity has not reached an aquifer yet but may migrate there some time in the future? How is "potable water" defined? Does it include potential sources of drinking water, and does it include use by just one individual? We believe that such migration must be considered and that the definition of potable water should be based on the state's classification of its ground water aquifers. The Draft Regulatory Guide should be revised to answer these questions.

Section 2.12 pertains to record retention. If the circumstances in 10 CFR 20.1401(c) (additional information is discovered after license termination showing release criteria were not met) or the checks every five years in 10 CFR 20.1403(c) are to apply, then a three year record retention time is not likely to be sufficient. Records for these kinds of situations should be maintained for significantly longer than 3 years. Complete records retained for historical purposes therefore also reduces the potential future costs to the public. The Draft Regulatory Guide should be revised to require longer retention periods.

In Section 3, the third paragraph of the section deals with the term "significant threat to the public" in the additional cleanup discussion. The Draft Regulatory Guide should address what is meant by significant and when would NRC require cleanup. For example, the Draft Regulatory Guide should address whether it would be the lower 25 mrem/yr requirement or whether it might it be higher such as 100 or even 500 mrem/yr or more.

In Section 3.1.1 and 3.1.2, the costs and benefits sections, the costs for the public and future users of the land to use an aquifer that is left above Maximum Contaminant Levels (MCLs) established under the Safe Drinking Water Act or above state regulations, but below NRC's 25 mrem/yr or even 100 mrem/yr all-pathways standard should be quantified as well as the benefits of cleaning up to a more stringent federal or state regulation; and the costs to the public such as opposition over a licensee leaving significant levels of radioactivity in the ground water. In addition, the costs incurred by pubic water systems having to treat water (surface or ground water) to meet MCLs after contamination caused by an NRC facility should be included.

In Section 3.1.6, there are other costs of restricted use not addressed such as the costs of setting up a regulatory program when the NRC no longer regulates for radiation health and safety. Furthermore, the statement on collective dose stated for residual radioactivity in ground water fails to mention the costs for the public and future users of the land using an aquifer that is left above Maximum Contaminant Levels (MCLs) established under the Safe Drinking Water Act but below NRC's 25 mrem/yr or even 100 mrem/yr standard. The Draft Regulatory Guide should be revised to include these concerns.

In Section 4, the third attribute for restricted controls is that the licensee has provided sufficient financial assurance to enable an independent third party to assume and carry out responsibilities for any necessary control and maintenance of the site. It is unclear who will fund the state or local government or possibly a citizens group that would enforces the controls. NRC's option (3) in Section 4.2.2. discusses a statement of intent rather than placing funds into an account when referring to a Federal, State, or local government. This implies that the enforcer, a responsibility which was that of the NRC funded by its licensees, will fund itself for that service. The discussion in Section 4.2.3 states that deed restrictions are generally self-maintaining, however it is not clear who pays to insure they are still working. The Draft Regulatory Guide should be clarified to ensure that sufficient funding is provided to the state and local government authorities and others who would oversee the site.

In Section 4.1, zoning, well-use restrictions, and building permit requirements are not permanent remedies or remedial actions that will with confidence protect the health and safety of the public unless there is active and continuing enforcement and oversight. For example, well use restrictions need to be accompanied by provisioning of alternative water supplies. Yet the NRC in its Draft Regulatory Guide and regulation places all of its program actions on either removal of radioactivity or institutional controls and states that physical controls lack a mechanism for legal enforcement. It fails to include permanent actions such as confinement or perimeter protection with a clay cover or leachate collection. The Draft Regulatory Guide goes on to say that institutional controls may include physical controls such as radiological monitoring. Monitoring alone is not a control to prevent exposure, it is a check to see if controls work. For example, the National Oil and Hazardous Substances Pollution Contingency Plan

(NCP) 40 CFR Section 300.430 states that institutional controls are generally used to supplement engineering controls as appropriate, however the use of institutional controls generally cannot be used as the sole remedy. The Draft Regulatory Guide should be revised to address these concerns.

In Section 4.1.1, the first bullet refers to the owner of the affected property. The Draft Regulatory Guide should explain what happens if there are several properties involved, such as in the case of a ground water plume that reaches outside the site boundary or with contamination that went off-site. The Draft Regulatory Guide should also indicate whether the owners of these properties will also have controls imposed upon them and how these controls would be implemented.

In Section 4.1.1, the second bullet first refers to State and local law, but then tells the reader to refer to "the property law of the particular state" without again mentioning local law. However, many zoning and land use laws are county and local laws, not just state laws. The Draft Regulatory Guide should be clarified to reflect this.

In Section 4.1.3.2, Section 4.1.1.2 is mistakenly numbered 4.1.3.2. This should be corrected in the Draft Regulatory Guide.

In Section 4.1.3.2, there is no mention here or elsewhere how or when violations are cited and provided to the public and federal, state, or local government. The Draft Regulatory Guide should be revised to clearly explain this.

In Section 4.1.1.5, the Draft Regulatory Guide should clearly explain who determines what happens when the party who is assigned to enforce the restrictions related to radiation protection is no longer willing or able to enforce them. The NRC is no longer involved and therefore will not have a role in determining this.

In Section 4.1.1.8, the second bullet, deed restrictions may be "self-maintaining" but not self-enforcing because someone has to enforce them if they are violated, and this may involve the party enforcing the controls having to hire a lawyer for representation in court. Funding should be provided for this contingency. Also, what if the restrictions need to be amended or removed, who funds this? The Draft Regulatory Guide should be revised to address these concerns.

In Section 4.1.1.9, the Section 4.1.1.4 condition to replace the enforcer should be included as part of the information about restrictions that is in the record. Also, the Draft Regulatory Guide should address how contaminated ground water, including off-site ground water, is to be described when it refers to a "legal description of the property" and "current owner." It should address what happens when ownership changes, especially in category (7). The Draft Regulatory Guide should explain what the "final remediation status report" is, as neither Section 2.12 of the Draft Regulatory Guide nor 10 CFR 20.1501 describe such a report. See the comment on the record system as a basis for why additional record keeping is required.

In Section 4.1.2, if government ownership of the land is the method of enforcement, the Draft Regulatory Guide should explain who enforces the government restriction on the land, especially for "protection against radiation hazards" when a government entity might be something as small as a town or village. Also, it is unclear why financial assurance is not required by a government since a small government entity having to implement a program for protection against radiation hazards could be costly over the long term. The Draft Regulatory Guide should be revised to address sufficient financial assurance for such a task.

In Section 4.1.3.2, the Draft Regulatory Guide should address how a small government entity like a town or village with responsibility for enforcement will deal with the radiation protection aspects, which are the primary ones assigned to the NRC and agreement states.

In Section 4.1.3.4, if release of a site because of radioactivity results in land use restrictions, why doesn't the licensee pay for the financial assurance regardless? The Draft Regulatory Guide should be revised to provide adequate funding.

Section 4.2.3.5 appears to be misnumbered as 4.2.3. This should be corrected.

In Section 4.2.3.5, the indication of the residual radioactivity remaining is the Final Status Survey of Section 2.12. The Draft Regulatory Guide should be revised to clarify this.

In Section 4.2, there appears to be a need for more than one "independent party" when there are government (local, state, or federal) entities. The same entity that can oversee, enforce, and cite violations should not be the same "independent party" described in this section to control and maintain the site. Otherwise, a conflict of interest will exist. The enforcer also should have radiation protection expertise. The Draft Regulatory Guide should be revised to reflect this.

In Section 4.2.3, again, it is unclear why financial assurance is not required for the system of maintaining deed restrictions for protection against radiation hazards purposes. The Draft Regulatory Guide should be revised to provide the financial assurance.

In Section 4.3, the second bullet's text that continues onto page 41 says "licensees who plan to release a site under restricted conditions will do the following", and one of the sub-bullets is "seek advice from representatives of a broad cross section of individuals and institutions in the community who may be affected by the decommissioning (affected parties)." The next subsection 4.3.2.1 then goes on to say affected parties may include "Any State, local, or Federal government agency, other than the NRC, that has jurisdiction or responsibilities with respect to the site to be decommissioned." What about tribal nations? Also, the Draft Regulatory Guide does not make clear the federal government's role in dealing with the federally recognized tribes as sovereign nations. Also, in Section 4.3.2.1, shouldn't a notice be required to identify affected parties? For the affected parties in the first bullet, the Draft Regulatory Guide should be more specific, such as including the US Environmental Protection Agency by name, state radiation

protection and environmental agencies, and tribal government. Also, the first bullet should say "has or might have jurisdiction" to include sites when another agency might have to step in such as EPA or a state radiation program. The third bullet should be revised to include ground water considerations under the site or across the site boundary. The Draft Regulatory Guide should be revised to reflect these concerns.

In Section 4.4, page 45, on the last line, the Draft Regulatory Guide states "It is desirable for a licensee who has a difficult site with unique decommissioning problems to meet with the NRC staff to describe its interests in, and plans for, using alternative criteria." Where will the licensee meet with the NRC, and will there be meetings with the NRC near where the involved public can attend? Where is the public and other federal and state and local government involvement in these difficult sites described? The Draft Regulatory Guide should be revised to explain these concerns.

In Section B, a quality system document should be added for data collection for dose modeling, such as ANSI/ASQC E4-1994.

September 9, 1999

NOTE TO: J. Greeves
J. Holonich
L. Camper

FROM: Nelson

SUBJECT: US EPA COMMENTS ON DRAFT REG GUIDE DG-4006

The subject comments are attached FYI. Although addressed to Carl, I recommend that action on these comments be transferred to RES because RES is responsible for finalizing the Reg Guide. I've forwarded a copy to Cheryl Trottier.

cc: L. Bell
T.C. Johnson
K. McConnell
T. Harris

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
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Mail Stop 8 A23
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[1]Please note that EPA recognizes that for some NRC licenses, there is essentially no contamination requiring cleanup, and decommissioning for these licensees can and should be relatively pro forma.

in order to meet radiation protection dose limits. Only in this way can the public be assured that current and future generations will receive the protection intended in decommissioning decisions.

In Section 4.1.3.2, the Guide states that there is one party that both restricts the land and enforces the controls. We see no reason why it must be the same party doing both jobs. In fact, there seems to be some advantage in having the function split between two different organizations. The most important thing is that the organization(s) doing both tasks be fully qualified and motivated to perform that task.

II. Inadequate public input and involvement.

EPA believes that the Guide does not provide sufficient opportunity for public comment and involvement. The Guide focuses its public requirements on the licensee and fails to ensure that the affected communities will have an opportunity to make informed comments on actions that are very significant in a community. These are issues which the public has a right to be involved in. The only section requiring NRC to seek public comment is Section 4.3, and that section applies only to license termination under restricted conditions. However, there are sites, especially those that involve complex issues affecting human health and the environment, which have many of the same kinds of needs for public input and input by other government and tribal organizations as those being proposed for restricted release. The Draft Regulatory Guide should be amended to include the kinds of public participation such as those outlined in NRC's documents[2] for a wider set of sites beyond just those proposed for restricted release.

Section 2.12 of the Draft Regulatory Guide states that only records showing the results of surveys and calibrations must be maintained, and only for three years. The NRC does not require that a comprehensive system of records be maintained for each of its sites. EPA recommends that this section of the Draft Regulatory Guide be expanded to address a comprehensive system of records. This record system should contain all documents which form the basis for selection of a license termination action, and the record system would also act as a vehicle for public participation in selecting a license termination action. Depending on the size and complexity, documents in the record for each site could include the following or equivalent: preliminary assessment documents, site investigation documents, remedial investigation work plans, decommissioning plans, NRC and licensee correspondence, inspection reports, sampling data, and the community relations plan. The record should be a compilation of documents related to the selection of the response action; it should include documents that form the bases for the decision, whether or not they support the response selection; and it should be an explanation of

[2]The NRC's "Public Involvement in the Nuclear Regulatory Process" at http://www.nrc.gov/OPA/gmo/tip/publicin.htm and the NRC's "Strategic Plan".

the basis for the selection of the response action[3]. Furthermore, as NRC moves to its Agency wide Documents Access Management System (ADAMS) system, the formats for electronic submittals should be specified for these licensee records such that the public can read them all of them without having to purchase special software.

These problems flow from a fundamental concern EPA has with the NRC process. The current process does not provide clear, early decision points for a wide range of sites which allow for public involvement and public understanding of what has been decided. Too many documents are submitted to the NRC and the public doesn't know whether or not they are approved. We believe that from a public involvement standpoint, it would improve the NRC process if there was at least one major document describing the site selected remedy and ultimate level of residual contamination. Ideally, NRC would propose and approve, approve with comments, or disapprove the document and take public comment on the proposal and make a decision on the record.

III. Failure to acknowledge state standards, such as ground water standards.

The Draft Regulatory Guide should acknowledge the existence of state ground water standards and provide a framework for working with those standards. Even if NRC is unwilling to enforce MCLs, it should clearly acknowledge the right of states to protect their own drinking water supplies. If NRC does not want to enforce ground water standards, it should provide a simple and efficient way of working with state governments so they can do so. It will be much more costly and burdensome if a state must come in after the NRC has decommissioned a site and require ground water cleanup.

In addition, if MCL levels are or will ever be exceeded because of the licensed radionuclides, the NRC should provide a process for informing and involving the public, local government, and public water systems that could be using the water. The NRC should also play a role as a catalyst for helping to resolve the problems that might result. This notification should be early enough so that the public, local government, and public water systems can be involved in discussions of the remedy selection. This notification would acknowledge the public's right to know the existing or potential contaminants in their drinking water, a right recognized in the Safe Drinking Water Act.

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[3]While not every license terminated may justify the need for a record or the degree of greater public notification and participation recommended, criteria that would justify them would include factors such as radionuclide(s) of concern, half life, radioactivity from licensed operations off-site, whether radioactivity from licensed operations will remain on the site after license termination, whether land use assumptions impact selection of cleanup levels or remedial actions, whether radioactivity will remain in inaccessible areas of buildings, and whether there is or will be contamination from any licensed radionuclide in the soil or ground water.

The Draft Regulatory Guide should address state ground water programs, such as Comprehensive State Ground Water Protection Programs.

IV. Other comments.

EPA has a number of concerns regarding the cleanup of subsurface contamination.

The Draft Regulatory Guide should discuss the use of a directed planning process and specifically the likelihood and the consequences of decision error or errors. This information can be used as the basis for establishing the quantity and quality of data needed to support a decision. The Draft Regulatory Guide also does not link subsurface contamination to future land use scenarios. The Draft Regulatory Guide should address the use of restricted conditions when dealing with subsurface contamination. What restrictions are placed on a site to prevent elevated subsurface contamination from being excavated and placed on the surface?

In addition, the Draft Regulatory Guide should reference the development of a conceptual site model which would assist the licensee, public, other government agencies, and NRC in understanding the level of knowledge that is available and the potential health and environmental significance of the subsurface contamination. Specifically, for subsurface contamination the measurement of the area and depth of contamination and average concentration is needed. Because current investigation techniques and statistical methods cannot accurately determine mean concentration of subsurface without a costly and intensive sampling program, conservative assumptions are typically used. NRC should define how these assumptions will be developed in the Draft Regulatory Guide.

In Section 1.2 of the Draft Regulatory Guide, NRC deals with the issue of the minimum justification for the use of default scenarios and parameters. The guidance states that a licensee needs to state that no conditions are reasonably expected to exist at the site outside those incorporated in the default scenarios and modeling assumptions that would cause a significant increase in the calculated dose. NRC should require an external verification process, such as public comment or peer review, to confirm the licensee statement. (This is another example of the use of public involvement.)

In Section 1.3 and 1.4, there is no discussion of peer review, technical review, or independent technical review for using other than the recommended parameters, scenarios, or computer models. The Draft Regulatory Guide should be revised to address these concerns.

In Section 1.4, the licensee is asked to provide the NRC sufficient information to allow review of the model, scenarios, and parameters if the licensee is to use other computer models. The Draft Regulatory Guide should state this information should be provided (or the list of references cited) to the public and other government agencies as well, such as including them or

referencing them through the system of records and enhanced public participation recommendations.

Section 2.1 (page 6 next to last paragraph) references the use of MARSSIM survey methods. The Draft Regulatory Guide should clarify which MARSSIM survey methods the NRC is referring to.

Section 2.10.4, which deals with piping and embedded piping, should address restricted use scenarios and five year reviews.

In Section 2.11.1, the Draft Regulatory Guide should address what happens if there are significant gaps in the historical site assessment records, such as no records.

In Sections 2.11.1 and .3, which deal with sub-surface residual radioactivity and paved parking lots, the Draft Regulatory Guide should clarify what percentage or ratio of mixing can occur when mixing uncontaminated material with residual radioactivity beneath the surface. Also, it is not clear how or if the subsurface contamination is related to future land use scenarios or to restricted release conditions, so the Draft Regulatory Guide should be revised to address these concerns.

In Section 2.11.4, the text discusses the condition that "radioactivity may have reached potable water". What about the case when radioactivity has not reached an aquifer yet but may migrate there some time in the future? How is "potable water" defined? Does it include potential sources of drinking water, and does it include use by just one individual? We believe that such migration must be considered and that the definition of potable water should be based on the state's classification of its ground water aquifers. The Draft Regulatory Guide should be revised to answer these questions.

Section 2.12 pertains to record retention. If the circumstances in 10 CFR 20.1401(c) (additional information is discovered after license termination showing release criteria were not met) or the checks every five years in 10 CFR 20.1403(c) are to apply, then a three year record retention time is not likely to be sufficient. Records for these kinds of situations should be maintained for significantly longer than 3 years. Complete records retained for historical purposes therefore also reduces the potential future costs to the public. The Draft Regulatory Guide should be revised to require longer retention periods.

In Section 3, the third paragraph of the section deals with the term "significant threat to the public" in the additional cleanup discussion. The Draft Regulatory Guide should address what is meant by significant and when would NRC require cleanup. For example, the Draft Regulatory Guide should address whether it would be the lower 25 mrem/yr requirement or whether it might it be higher such as 100 or even 500 mrem/yr or more.

In Section 3.1.1 and 3.1.2, the costs and benefits sections, the costs for the public and future users of the land to use an aquifer that is left above Maximum Contaminant Levels (MCLs) established under the Safe Drinking Water Act or above state regulations, but below NRC's 25 mrem/yr or even 100 mrem/yr all-pathways standard should be quantified as well as the benefits of cleaning up to a more stringent federal or state regulation; and the costs to the public such as opposition over a licensee leaving significant levels of radioactivity in the ground water. In addition, the costs incurred by pubic water systems having to treat water (surface or ground water) to meet MCLs after contamination caused by an NRC facility should be included.

In Section 3.1.6, there are other costs of restricted use not addressed such as the costs of setting up a regulatory program when the NRC no longer regulates for radiation health and safety. Furthermore, the statement on collective dose stated for residual radioactivity in ground water fails to mention the costs for the public and future users of the land using an aquifer that is left above Maximum Contaminant Levels (MCLs) established under the Safe Drinking Water Act but below NRC's 25 mrem/yr or even 100 mrem/yr standard. The Draft Regulatory Guide should be revised to include these concerns.

In Section 4, the third attribute for restricted controls is that the licensee has provided sufficient financial assurance to enable an independent third party to assume and carry out responsibilities for any necessary control and maintenance of the site. It is unclear who will fund the state or local government or possibly a citizens group that would enforces the controls. NRC's option (3) in Section 4.2.2. discusses a statement of intent rather than placing funds into an account when referring to a Federal, State, or local government. This implies that the enforcer, a responsibility which was that of the NRC funded by its licensees, will fund itself for that service. The discussion in Section 4.2.3 states that deed restrictions are generally self-maintaining, however it is not clear who pays to insure they are still working. The Draft Regulatory Guide should be clarified to ensure that sufficient funding is provided to the state and local government authorities and others who would oversee the site.

In Section 4.1, zoning, well-use restrictions, and building permit requirements are not permanent remedies or remedial actions that will with confidence protect the health and safety of the public unless there is active and continuing enforcement and oversight. For example, well use restrictions need to be accompanied by provisioning of alternative water supplies. Yet the NRC in its Draft Regulatory Guide and regulation places all of its program actions on either removal of radioactivity or institutional controls and states that physical controls lack a mechanism for legal enforcement. It fails to include permanent actions such as confinement or perimeter protection with a clay cover or leachate collection. The Draft Regulatory Guide goes on to say that institutional controls may include physical controls such as radiological monitoring. Monitoring alone is not a control to prevent exposure, it is a check to see if controls work. For example, the National Oil and Hazardous Substances Pollution Contingency Plan

(NCP) 40 CFR Section 300.430 states that institutional controls are generally used to supplement engineering controls as appropriate, however the use of institutional controls generally cannot be used as the sole remedy. The Draft Regulatory Guide should be revised to address these concerns.

In Section 4.1.1, the first bullet refers to the owner of the affected property. The Draft Regulatory Guide should explain what happens if there are several properties involved, such as in the case of a ground water plume that reaches outside the site boundary or with contamination that went off-site. The Draft Regulatory Guide should also indicate whether the owners of these properties will also have controls imposed upon them and how these controls would be implemented.

In Section 4.1.1, the second bullet first refers to State and local law, but then tells the reader to refer to "the property law of the particular state" without again mentioning local law. However, many zoning and land use laws are county and local laws, not just state laws. The Draft Regulatory Guide should be clarified to reflect this.

In Section 4.1.3.2, Section 4.1.1.2 is mistakenly numbered 4.1.3.2. This should be corrected in the Draft Regulatory Guide.

In Section 4.1.3.2, there is no mention here or elsewhere how or when violations are cited and provided to the public and federal, state, or local government. The Draft Regulatory Guide should be revised to clearly explain this.

In Section 4.1.1.5, the Draft Regulatory Guide should clearly explain who determines what happens when the party who is assigned to enforce the restrictions related to radiation protection is no longer willing or able to enforce them. The NRC is no longer involved and therefore will not have a role in determining this.

In Section 4.1.1.8, the second bullet, deed restrictions may be "self-maintaining" but not self-enforcing because someone has to enforce them if they are violated, and this may involve the party enforcing the controls having to hire a lawyer for representation in court. Funding should be provided for this contingency. Also, what if the restrictions need to be amended or removed, who funds this? The Draft Regulatory Guide should be revised to address these concerns.

In Section 4.1.1.9, the Section 4.1.1.4 condition to replace the enforcer should be included as part of the information about restrictions that is in the record. Also, the Draft Regulatory Guide should address how contaminated ground water, including off-site ground water, is to be described when it refers to a "legal description of the property" and "current owner." It should address what happens when ownership changes, especially in category (7). The Draft Regulatory Guide should explain what the "final remediation status report" is, as neither Section 2.12 of the Draft Regulatory Guide nor 10 CFR 20.1501 describe such a report. See the comment on the record system as a basis for why additional record keeping is required.

In Section 4.1.2, if government ownership of the land is the method of enforcement, the Draft Regulatory Guide should explain who enforces the government restriction on the land, especially for "protection against radiation hazards" when a government entity might be something as small as a town or village. Also, it is unclear why financial assurance is not required by a government since a small government entity having to implement a program for protection against radiation hazards could be costly over the long term. The Draft Regulatory Guide should be revised to address sufficient financial assurance for such a task.

In Section 4.1.3.2, the Draft Regulatory Guide should address how a small government entity like a town or village with responsibility for enforcement will deal with the radiation protection aspects, which are the primary ones assigned to the NRC and agreement states.

In Section 4.1.3.4, if release of a site because of radioactivity results in land use restrictions, why doesn't the licensee pay for the financial assurance regardless? The Draft Regulatory Guide should be revised to provide adequate funding.

Section 4.2.3.5 appears to be misnumbered as 4.2.3. This should be corrected.

In Section 4.2.3.5, the indication of the residual radioactivity remaining is the Final Status Survey of Section 2.12. The Draft Regulatory Guide should be revised to clarify this.

In Section 4.2, there appears to be a need for more than one "independent party" when there are government (local, state, or federal) entities. The same entity that can oversee, enforce, and cite violations should not be the same "independent party" described in this section to control and maintain the site. Otherwise, a conflict of interest will exist. The enforcer also should have radiation protection expertise. The Draft Regulatory Guide should be revised to reflect this.

In Section 4.2.3, again, it is unclear why financial assurance is not required for the system of maintaining deed restrictions for protection against radiation hazards purposes. The Draft Regulatory Guide should be revised to provide the financial assurance.

In Section 4.3, the second bullet's text that continues onto page 41 says "licensees who plan to release a site under restricted conditions will do the following", and one of the sub-bullets is "seek advice from representatives of a broad cross section of individuals and institutions in the community who may be affected by the decommissioning (affected parties)." The next subsection 4.3.2.1 then goes on to say affected parties may include "Any State, local, or Federal government agency, other than the NRC, that has jurisdiction or responsibilities with respect to the site to be decommissioned." What about tribal nations? Also, the Draft Regulatory Guide does not make clear the federal government's role in dealing with the federally recognized tribes as sovereign nations. Also, in Section 4.3.2.1, shouldn't a notice be required to identify affected parties? For the affected parties in the first bullet, the Draft Regulatory Guide should be more specific, such as including the US Environmental Protection Agency by name, state radiation

protection and environmental agencies, and tribal government. Also, the first bullet should say "has or might have jurisdiction" to include sites when another agency might have to step in such as EPA or a state radiation program. The third bullet should be revised to include ground water considerations under the site or across the site boundary. The Draft Regulatory Guide should be revised to reflect these concerns.

In Section 4.4, page 45, on the last line, the Draft Regulatory Guide states "It is desirable for a licensee who has a difficult site with unique decommissioning problems to meet with the NRC staff to describe its interests in, and plans for, using alternative criteria." Where will the licensee meet with the NRC, and will there be meetings with the NRC near where the involved public can attend? Where is the public and other federal and state and local government involvement in these difficult sites described? The Draft Regulatory Guide should be revised to explain these concerns.

In Section B, a quality system document should be added for data collection for dose modeling, such as ANSI/ASQC E4-1994.