UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 9, 2003

MEMORANDUM TO: Martin J. Virgilio, Director
Office of Nuclear Material Safety
and Safeguards

FROM: Kathy Halvey Gibson, Chairman
Differing Professional View Panel

SUBJECT: PANEL REPORT: REVIEW OF THE DIFFERING PROFESSIONAL VIEW ON CHEMICAL CONSEQUENCES AT THE PROPOSED MIXED-OXIDE FUEL FABRICATION FACILITY (NMSS-DPV-2003-01)

In response to your March 3, 2003, memorandum on this subject, I hereby forward to you the attached report of our ad hoc panel convened to review a Differing Professional View (DPV). The DPV addressed the applicability of 10 CFR 70.64 and the U.S. Nuclear Regulatory Commission's (NRC's) regulatory authority to regulate chemical hazards at the proposed mixed-oxide fuel fabrication facility. The panel concluded that more information is needed from the applicant to determine whether the subject chemical hazards fall within NRC's regulatory authority.

cc: D. Stout
W. Schwink

Attachment: Ad Hoc Panel Report on DPV

REPORT OF AN AD HOC PANEL
CONVENED TO REVIEW THE DIFFERING PROFESSIONAL VIEW ON
CHEMICAL CONSEQUENCES AT THE PROPOSED MIXED-OXIDE FUEL FABRICATION
FACILITY (NMSS-DPV-2003-01)

Kathy Halvey Gibson 5/9/03
Kathy Halvey Gibson, Chairman

D. Stout 5/9/03
Donald E. Stout, Member

Walter S. Schwink 05/09/03
Walter S. Schwink, Member

Date: May 8, 2003

1. PURPOSES

The purposes of this Ad Hoc Panel were to: 1) review the "Differing Professional View (DPV) on Chemical Consequences at the Proposed Mixed-Oxide (MOX) Fuel Fabrication Facility", and 2) report to the Director, Office of Nuclear Material Safety and Safeguards (NMSS) recommendations based on the results of the review.

2. BACKGROUND

On February 28, 2001, Duke Cogema Stone & Webster (DCS or the applicant) submitted to the U.S. Nuclear Regulatory Commission (NRC), a construction authorization request (CAR), pertaining to a proposed MOX Fuel Fabrication Facility on the U.S. Department of Energy's (DOE's) Savannah River Site.

The staff evaluated the information provided by the applicant for chemical process safety by reviewing Chapter 8 of the CAR, other sections of the CAR, supplementary information provided by the applicant, and relevant documents available at the applicant's offices but not submitted by the applicant. The results of the review are documented in Chapter 8 of the Draft Safety Evaluation Report on the Construction Authorization Request for the Mixed-Oxide Fuel Fabrication Facility (DSER) dated April 30, 2002. The submitter of the DPV is also the reviewer for this section of the CAR.

Section 70.64 of 10 CFR requires that baseline design criteria be applied to the design of new facilities, and all facilities must comply with the performance requirements in 10 CFR 70.61. With respect to chemical protection, 10 CFR 70.64(a)(5) requires that the design provide for adequate protection against chemical risks produced from licensed material, facility conditions which affect the safety of licensed material, and hazardous chemicals produced from licensed material.

Section 70.62(c)(1) states that each licensee or applicant shall conduct and maintain an integrated safety analysis (ISA), of appropriate detail for the complexity of the process, which identifies: (i) radiological hazards related to possessing or processing licensed material at its facility; (ii) chemical hazards of licensed material and hazardous chemicals produced from licensed material; and (iii) Facility hazards that could affect the safety of licensed materials and thus present an increased radiological risk. The applicant has submitted the CAR, but has not yet performed or submitted an ISA.

NRC has in place a Memorandum of Understanding (MOU) with the Occupational Safety and Health Administration (OSHA) governing chemical safety oversight at NRC-licensed facilities. Pursuant to the MOU, NRC oversees chemical safety issues related to: (1) radiation risk produced by radioactive materials, (2) chemical risk produced by radioactive materials, and (3) plant conditions that affect the safety and safe handling of radioactive materials. NRC does not oversee facility conditions that result in an occupational risk from chemical releases which do not involve NRC-licensed materials and do not affect the safe use of licensed radioactive material.

The staff review, as documented in the DSER, identified that the applicant did not clearly state whether workers outside of the emergency control room (ECR) are required to perform safety-related actions, that affect radiological safety, during or after a chemical release. DSER Open Item CS-5 documented the reviewer's concern as follows: "Modeling of Hazardous Chemical Releases. The applicant should identify any operator actions outside of the control room that are required for chemical safety. If such actions are identified, then information is needed on the modeling of potential chemical releases and any PSSCs and design bases. . . . (DSER Section 8.1.2.4.1)."

On December 10-12, 2002, NRC staff met with the applicant to discuss issues related to the CAR or identified in the DSER including Open Item CS-5. The meeting summary was issued on January 31, 2003. The meeting summary reported "DCS stated that operator actions outside of the control room and chemical events are not coupled and that there is no chemical release that would result in a radiological release. DCS expected that any worker dose increases would be small and would not impact the Part 70.61 performance requirements." In Attachment 5 of the meeting summary entitled "Clarifying Information Provided By DCS", with regard to DCS actions on Open Item CS-5, the applicant states "any adverse impact to an operator occurring during a release of unregulated material (i.e., material that does not constitute licensed material or chemicals produced from licensed material) will not result in exceeding the performance criteria of 10 CFR 70.61." Based on the discussions during the meeting and the documented clarifying information, the issue was documented in the meeting summary as closed.

3. DISCUSSION

3.1 Summary of DPV

Following the conclusion of the meeting with the applicant and the decision to close Open Item CS-5, Mr. Murray prepared a DPV. Mr. Murray believes that there may be operator actions required after a chemical release that would result in: (1) the workers not being able to perform these safety actions due to chemical exposure, or (2) an increased dose to the workers as a result of a chemical release. He contends that contrary to the applicant's (and the prevailing management's/staff's) position, NRC regulates these events under the "facility conditions that affect the safety of licensed material" provision in 10 CFR 70.64(a)(5), as well as "Facility hazards that could affect the safety of licensed materials, and thus present an increased

radiological risk" provision in 10 CFR 70.62(c)(1)(iii). The DPV discusses chemical consequences from potential chemical events, that both staff and the applicant acknowledge might have significant or even fatal consequences for some facility and site workers, with a "not unlikely" likelihood, and some additional radiation exposure. Mr. Murray states that the prevailing management's/staff's and applicant's positions are that potentially applicable sections of the regulations (10 CFR Part 70; specifically 10 CFR 70.64) do not apply and, thus, are not regulated by NRC. He concludes that this is too simple an interpretation that contradicts the regulations, prior NRC precedents, Standard Review Plans (SRPs), and the "General Duty" clause of the Atomic Energy Act. The consequences could be safety issues that may not be adequately addressed at the proposed facility. In addition, the burden of proof has not been placed on the applicant.

Mr. Murray requests that: (1) the management/staff decision accepting the applicant's position on these chemical events be reversed; (2) the applicant submit a safety strategy for addressing these events; and (3) NMSS establish consistent guidance for addressing the potential consequences from chemical events and facility conditions affecting the safety of licensed radioactive material.

3.2 DPV POSITIONS AND PANEL ASSESSMENT

3.2.1 DPV Position (1)

The MOX CAR review should use an approach that fully addresses the requirements of its regulations, which follows its guidance and precedence [sic], and that regulates chemical safety and facility conditions which impact the safe handling of radioactive materials. Thus, NRC should require prevention or mitigation features to address these potential events and require management measures to ensure they are available and reliable. NRC should also acknowledge, and consider in its evaluations that the design approach of the proposed MOX facility with multiple barriers, cells, contamination and confinement zones, and security will impede facility evacuation and emergency response to chemical events. Therefore, a "see and flee" approach is unlikely to be acceptable.

Mr. Murray asserts, in the DPV, that in the MOX CAR, management and some staff members have accepted the applicant's position that chemical effects that are not from licensed radioactive materials are not regulated by NRC, even if they could impact the safe handling of radioactive materials, cause additional radiation dose or uptake, and/or result in serious consequences, including fatalities. In the review of the MOX application, Mr. Murray asserts that the prevailing management/staff position does not appear to adequately consider the third category of chemical safety regulated by NRC (i.e., chemical hazards affecting the safe handling of radioactive materials) nor the requirements of the general duty clauses. Mr. Murray is concerned that the applicant had concluded, in its chemical consequences analyses, that nitrogen tetraoxide and hydrazine could exceed the numerical value of the TEEL-2 limit at the site boundary [about 8 kilometers (5 miles) away],-- the assumed location for the public

receptor-- and that nitrogen tetraoxide releases which result in such serious estimated concentrations would likely result in fatalities. Mr. Murray provided data from a number of sources and studies that indicate the potential for severe chemical consequences at the proposed MOX facility.

Sections 5.5.2.10 and 8.4 of the Revised Construction Authorization Request (RCAR) summarize the chemical accident consequences. The applicant has assessed a "not unlikely" likelihood for chemical releases. The analysis is stated to follow the guidance found in NUREG/CR-6410. The applicant has identified a uranium dioxide release from a fire event as requiring controls under Part 70; this event is regulated by NRC because the chemical hazards arise from a radioactive material. This is representative of the first category of chemical safety regulated by NRC. The applicant has proposed controls to provide adequate assurances of safety.

The applicant has identified two events involving hazardous chemicals produced from radioactive materials. One involves a chlorine release and the other involves a release of nitrogen tetraoxide via the oxidation column. These are representative of the second category of chemical safety regulated by NRC. The applicant has proposed controls to provide adequate assurances of safety; for nitrogen tetraoxide, these controls limit the release rate to under 44 kilograms/hour (non-metric equivalent) so that TEEL-2 limits (15 mg/m3) are not exceeded for the 100 meter receptor.

The RCAR states "No facility worker or operator actions outside the control room are required to mitigate the consequences to meet the requirements of 10 CFR 70.61 for a chemical release." The applicant has stated that the only safety functions to meet the 10 CFR 70.61 performance requirements for operators are in the ECR and the air conditioning system is designated as a safety control. The applicant has identified 10 administrative controls, with some 27 safety functions, for radiological safety, that occur outside of the ECR. However, no other controls are identified for chemical safety or for meeting Sections 70.62 and 70.64(a)(5) requirements for chemical safety.

NRC held a public meeting with the applicant. One of the subjects discussed was plant conditions affecting radiological safety (i.e., the third category of chemical safety regulated by NRC) as part of open item CS-5. The applicant stated that the administrative controls identified as primary structures, systems, and components (PSSCs) were permissive in nature (i.e., not associated with an ongoing activity) or the activity would fail safe. The applicant stated that the performance requirements of Section 70.61 would not be exceeded. In the DPV, Mr. Murray contends that the applicant also stated that, during a chemical release or event, there could be worker radiation exposures incurred that were below 10 CFR 70.61 levels (i.e., 100 rem for a high-consequence event and 25 rem for an intermediate-consequence event) and that severe health effects or death could occur due to the chemical exposure. This was not documented in the meeting summary. The applicant stated these were not regulated. In essence, the applicant implied the third category of chemical hazards regulated by NRC was not applicable

to its facility, based on the applicant's conclusion that the radiological consequences were below 10 CFR 70.61 performance requirements.

MOX project management and some staff accepted the applicant's assertion that, outside of the operators in the ECR, no operator actions were required to meet the radiological performance requirements of 10 CFR 70.61, even though there could be radiological dose increases and severe health effects or death from the chemical exposures. No burden of proof was required of the applicant and this decision has not been formally documented other than the item being documented as closed in the December Meeting Summary.

Mr. Murray asserts that some staff members have acquiesced: they do not believe the applicant can sufficiently automate the plant so that operator actions for safety are not required outside of the control room; yet, they are willing to accept the assertion for the construction permit stage and make the point during the possession-and-use license application. However, this implies it should be considered as a safety issue now or NRC could be placed in the unpleasant position of requiring future changes in a constructed facility. In addition, it overlooks the "facility condition" requirements of the regulations (70.64(a)(5)) and NRC precedents. Mr. Murray concludes the applicant has not justified its assertion and provided reasonable assurance - the MOX SRP criterion - that radiological safety is not impacted by major chemical releases.

Panel Assessment

The Panel has evaluated the DPV and a lengthy list of related background documents referenced in the DPV to determine if the issues raised in the DPV warrant further consideration. The Panel identified the following issues that needed to be considered to evaluate the merits of the DPV.

- Are releases of hazardous chemicals that affect the safety of licensed material and increase radiological risk regulated by NRC?
- Are hazardous chemicals that result in severe consequences including death, but which do not affect the safety of licensed material and increase radiological risks, regulated by NRC, possibly under the general duty clauses?
- Will potential chemical releases at the proposed MOX facility affect the safety of licensed material and increase radiological risk?
- Should the management/staff position as asserted in the DPV be reversed?

Are releases of hazardous chemicals that affect the safety of licensed material and increase radiological risk regulated by NRC?

The Panel reviewed applicable sections of Part 70, including the applicable sections of the Federal Register notices (FRNs) for the proposed (July 30, 1999) and final (September 18,

2000) revised rules, as well as the SRP. The Panel met with Mr. Murray and also received supplemental information from him via electronic mail and telephone conversations. The Panel also reviewed the March 10, 2003, memorandum from Robert C. Pierson, Director, Division of Fuel Cycle Safety and Safeguards, NMSS, through Martin J. Virgilio, Director, NMSS, to Carl J. Paperiello, Deputy Executive Director for Materials, Research and State Programs, titled "Regulatory Authority over Chemical Hazards at Fuel Cycle Facilities." After the events of September 11, 2001, NRC initiated actions, at licensed fuel cycle facilities, that may have caused a perception that NRC had changed its regulatory position regarding safety regulation of hazardous chemicals. The purpose of the March 10, 2003, memorandum was to reiterate the NRC's role concerning safety regulation of hazardous chemicals at NRC-licensed fuel cycle facilities and reaffirm the staff's application of Part 70 for regulation of hazardous chemicals at NRC-licensed fuel cycle facilities. This memorandum lists the three categories of hazards that NRC regulates in accordance with 10 CFR 70.62(c) as follows: (1) radiological hazards related to the processing of licensed material; (2) chemical hazards of licensed materials and hazardous chemicals produced from licensed material; and (3) facility hazards that could affect the safety of licensed materials and thus present an increased radiological risk. The memo then provides examples of the types of chemicals that NRC regulates and examples of chemicals that NRC would not regulate. The Panel concludes that this guidance, in conjunction with the regulations, FRNs, and SRP, are clear that chemical releases which affect the safety of licensed materials and present an increase in radiological risk are regulated by NRC.

Are hazardous chemicals that result in severe consequences, including death, but do not affect the safety of licensed material and increase radiological risks, regulated by NRC, possibly under the general duty clauses?

The July 30, 1999, FRN for the proposed rule (p. 41341), and the March 10, 2003, memorandum "Regulatory Authority over Chemical Hazards at Fuel Cycle Facilities" clarify that severe chemical effects (including potential fatalities) that do not affect the safety of licensed material and increase radiological risks (i.e., do not fall within the third category of chemical hazards) are regulated by the Occupational Safety and Health Act (OSHA) and the U.S. Environmental Protection Agency (EPA). Plant conditions that result in an occupational risk, but do not affect the safety of licensed radioactive materials are regulated by OSHA. For chemicals that are not covered by Process Safety Management or Risk Management Plan regulations, OSHA and EPA rely on the general duty clause.

Will potential chemical releases at the MOX facility affect the safety of licensed material and increase radiological risk?

The Panel reviewed applicable sections of the RCAR dated October, 2002, and the December 10-12, 2002, Meeting Summary. The Panel concluded that the information provided by the applicant appears to be incomplete and contradictory with regard to this question. Additionally, based on the documents reviewed by the Panel, the applicant did not appear to provide data to support its conclusions.

On page 5.5-55 of the RCAR, the applicant states "all unmitigated event likelihoods were assumed to be Not Unlikely." The applicant concludes that, "No facility worker or operator actions outside the control room are required to mitigate the consequences to meet the requirements of 10 CFR 70.61 for a chemical release (p. 5.5-56)." and "There are no design basis events that require immediate operator action to mitigate the consequences to below the performance criteria of 10 CFR 70.61" (p. 12-2). Conversely, further on page 12-2, the applicant states "Operators *primarily* perform monitoring activities in response to emergency conditions. The AP and MP processes are designed to shut down during upset conditions." and "At this stage of design, *very few* if any personnel actions are expected to be relied on for safety. Specific actions required to prevent or mitigate design basis events will be identified during final design and included in the appropriate procedures." (emphasis added) The applicant also states in the RCAR that further chemical process safety evaluation will be performed:

- Pg. 8-1, "Further chemical process safety evaluation will be performed as part of the detailed design and will be included in the Integrated Safety Analysis (ISA) Summary submitted with the license application for possession and use of special nuclear material (SNM)."

- Pg. 8-5, "Hazards and operability studies and other evaluations will be prepared as part of the ISA during the detailed design to support the identification of other inadvertent chemical interactions. A complete chemical interaction evaluation will be provided in the license application for possession and use of SNM."

- Pg. 8-12 says in the unlikely event that the ISA performed as part of detailed design identifies events that are not bounded, additional structures, systems, and components (SSCs) will be identified to ensure that chemical risks are acceptable.

- Pg. 12-4, "Criteria for HFE are identified in MFFF design basis documents and will be applied throughout the final design for aspects of operation and maintenance of the MFFF. The task analysis will be completed during final design, and will reflect the personnel activities relied on for safety identified as part of the development of the ISA."

In the Panel's review of the December 10-12, 2002, Meeting Summary, Att. 2, the following statements were noted to be contradictory:

- DCS stated that operator actions outside of the control room and chemical events are not coupled and that there is no chemical release that would result in a radiological release.

- DCS expected that any worker dose increases would be small and would not impact the 10 CFR 70.61 performance requirements.

Additionally, the applicant's proposed actions listed in the Public Meeting Summary of Action Items for CS-05 uses the term "unregulated release". It states "...any adverse impact to an operator occurring during a release of unregulated material (i.e., does not constitute "licensed material or chemicals produced from licensed material") will not result in exceeding the performance criteria of 10 CFR 70.61." It is not clear to the Panel from the documents reviewed how worker doses would increase if there were no radiological release resulting from any chemical release. The applicant did not provide an analysis or data to support its conclusions. The RCAR seems to indicate that further analyses will be done. The Panel is unable to determine whether chemical releases will impact the safety of licensed material and increase radiological risk, from the information provided by the applicant in the RCAR, and documented in the Public Meeting Summary. Further, it appears that the applicant has not appropriately considered the third category of chemical hazards, believing that if the chemical does not constitute licensed material or chemicals produced from licensed material it is "unregulated".

The Panel also noted, in its review, that the July 30, 1999, FRN for the proposed rule revision (p. 41341) states that the performance requirements of 10 CFR 70.61 include explicit standards for the first two regulation categories (radiation risk produced by radioactive materials and chemical risk produced by radioactive materials), and that the third area--plant conditions that affect the safety of radioactive materials--is specifically evaluated by licensees under the ISA requirements of 10 CFR 70.62(c)(1)(iii). The FRN provides the following example of the third regulation category: "if the failure of a chemical system adjacent to a nuclear system could affect the safety of the nuclear system such that the radiation dose (and associated likelihood of that accident) exceeded a performance requirement, the chemical system failure would be within the scope of the ISA and the means to prevent the chemical system from impacting the nuclear system would be within NRC's regulatory purview." It does not appear that the applicant considered this type of event in the RCAR, but must consider it for the ISA. The regulations and guidance, including the March 10, 2003 memorandum, imply that the NRC review be based on the applicant's ISA. The RCAR indicates that further analyses will be done as part of the ISA. The Panel believes that part of the problem in drawing a conclusion specifically regarding the third category may be that the ISA has not been submitted for NRC review such that the reviewer could perform a complete assessment of the applicant's compliance with this third category of chemical hazards. The applicant's information in the RCAR is confusing in this regard. It is not clear that the analyses and data have been completed by the applicant and submitted to NRC such that any firm conclusions regarding the third category of chemicals can be reached.

Should the management/staff position as asserted in the DPV be reversed?

The Panel agrees with Mr. Murray that the applicant needs to consider all chemical/facility hazards, and meet the baseline design criteria of 10 CFR 70.64 and the performance criteria of

10 CFR 70.61. The Panel cannot determine that the management/staff position be reversed because sufficient information has not been provided by the applicant that would allow for anyone to make a finding that adequate safety has been provided at this point.

3.2.2 DPV Position (2)

The MOX approach on chemical safety and "facility conditions affecting the safe handling of licensed material" should be formally documented, say in a Branch Technical Position.

Panel Assessment

The Panel reviewed applicable sections of Part 70, including the applicable sections of the FRN, as well as the SRP. The Panel also reviewed the March 10, 2003, memorandum from Robert C. Pierson, Director, Division of Fuel Cycle Safety and Safeguards, NMSS, through Martin J. Virgilio, Director, NMSS, to Carl J. Paperiello, Deputy Executive Director for Materials, Research and State Programs, titled "Regulatory Authority over Chemical Hazards at Fuel Cycle Facilities". This memorandum lists the three categories of hazards that NRC regulates in accordance with 10 CFR 70.62(c) as follows: (1) radiological hazards related to the processing of licensed material; (2) chemical hazards of licensed materials and hazardous chemicals produced from licensed material; and (3) facility hazards that could affect the safety of licensed materials and thus present an increased radiological risk. The memo then provides examples of the types of chemicals that NRC regulates and examples of chemicals that NRC would not regulate. The Panel believes that this memorandum, specifically the examples for item (3) and examples of chemicals that NRC would not provide safety regulation for, provides the documented approach that Mr. Murray seeks. However, it appears to the Panel that managers and staff, as well as the applicant, may not appreciate the nuances of the third category of hazards and would benefit from a review of the March 10, 2003, memorandum and the July 30, 1999, FRN section on 10 CFR 70.61 (p. 41341).

3.2.3 DPV Position (3)

NMSS should have clear guidance on addressing chemical effects at other facilities it regulates and for future license applications and amendments, particularly when the chemical effects are severe (including potential fatalities) and the potential impact upon the safe handling of radioactive materials is real but difficult to quantify in terms of dose.

Panel Assessment

The March 10, 2003, memorandum from Robert C. Pierson, Director, Division of Fuel Cycle Safety and Safeguards, NMSS, through Martin J. Virgilio, Director, NMSS, to Carl J. Paperiello, Deputy Executive Director for Materials, Research and State Programs, titled "Regulatory Authority over Chemical Hazards at Fuel Cycle Facilities" clarifies and provides examples of chemicals that NRC does and does not regulate. The memo further states "NRC staff will review the accident sequences and consequences included in the licensees' safety analyses to

verify that hazardous chemical consequences produced from licensed material meet regulatory requirements and that facility hazards that could affect licensed material and increase radiological risk have been addressed." The Panel concludes that this guidance, in conjunction with the regulations, FRNs, and SRP, are clear that chemical releases that present an increase in radiological risk are regulated by NRC. The applicant has provided apparent conflicting and incomplete information on chemical hazards that could affect the safety of licensed material and present an increased radiological risk. The regulations and guidance, including the March 10, 2003, memo, imply that the NRC review be based on the applicant's ISA. The Panel believes that part of the problem in drawing a conclusion may be that the ISA has not been submitted for NRC review such that the reviewer could perform a complete assessment of the applicant's compliance with this third category of chemical hazards. Guidance for the processing of applications that do not include the ISA at the CAR stage may be helpful.

4. PANEL RECOMMENDATIONS

The recommendations of the Panel are intended to improve the quality and consistency of the information provided to NRC staff by applicants and licensees. The intent is to provide a clear and sufficient safety basis that would allow NRC to determine if an adequate margin of safety is being provided by the applicant. Based on the inconsistent information provided to NRC, it is not clear to the Panel that the applicant and some NRC managers and staff members understand NRC's regulation of hazardous chemicals at facilities licensed under Part 70. The following recommendations are offered to help address the inconsistent safety information and understanding of the regulations, and to provide clear communication among NRC, the applicant, and the public.

1. The Panel recommends that Item CS-5 be reopened or a new open item be established to request that the applicant provide additional information to resolve the conflicting information provided in the RCAR and documented in the meeting minutes. The Project Manager should ensure that the applicant understands that hazardous chemicals which would affect the safety of licensed material and thus present an increased radiological risk are regulated by the NRC, even when the dose is below the 70.61 performance criteria. The Panel recommends that the applicant be requested to document the preliminary analyses and data in the RCAR to clearly support their conclusions that no safety controls outside the control room are needed for identified hazardous chemicals that would affect the safety of licensed material and thus present an increased radiological risk (including the chemicals and the resulting doses), and request that they confirm that this category of chemical hazards will be analyzed as part of the ISA as indicated in the RCAR and required by 10 CFR 70.62(c)(1)(iii). The results of these requests should be documented in the SER.

2. The Panel recommends that NMSS consider developing guidance for inclusion in the SRP that addresses processing a construction application that does not include the ISA.

3. The Panel recommends that actions be taken to ensure that the applicant and relevant NRC staff understand the "facility conditions which affect the safety of licensed material" provision in 10 CFR 70.64(a)(5) as well as "Facility hazards that could affect the safety of licensed materials and thus present an increased radiological risk" provision in Section 70.62(c)(1)(iii). Distribution of the March 3, 2003, memorandum and applicable FRN sections could be an efficient method to accomplish this recommendation.

4. The Panel recommends that NMSS management determine why Item CS-5 was closed during the public meeting when the technical reviewer continued to have valid questions about the issue. Other items remained open following the public meeting, so it is not clear to the Panel why Item CS-5 was closed at that time. The DPV did not request resolution of this concern, but focused more on the technical and safety aspects of the situation which the Panel then focused on in our review. However, the Panel believes that an understanding of the decision-making process surrounding the closure of the item will provide lessons-learned to avoid premature closure of safety issues in the future.