FINAL REPORT OF THE WORKING GROUP ON EVENT REPORTING

April 2001

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EXECUTIVE SUMMARY

On January 27, 2000, the NRC Office of Nuclear Material Safety and Safeguards (NMSS) formed a Working Group to provide NRC management with recommendations for making the reporting and assessment of material events more effective, efficient, and realistic. Agreement States and NRC Regions had raised concerns that the resources required to submit event reports and respond to requests for additional information were having a significant impact on their programs. In addition, NRC management had a growing perception that certain parts (i.e., briefings, etc.) of the materials event program are inefficient. Although NRC Headquarters conducted a self-assessment in 1999 (see SECY-99-005, Self-Assessment of Operational Safety Data Review Processes), a review by the internal stakeholders was needed to address these concerns. The quality of materials event data is important because it is used to measure outcomes and determine if the performance measures in the NRC Strategic Plan (NUREG-1614) have been met.

The charter for the Working Group is provided in Appendix A. Originally, it was proposed that the Working Group review current regulations for event reporting, and identify what information should be reported based on the health and safety significance of this information. The purpose of this was to determine if we, as regulators, were collecting the right safety information across the nation, and at the right level of detail. However, the Working Group did not believe it had the expertise to define the ideal set of reporting requirements for every type of licensee. The final charter directed the Working Group to compare the NRC Strategic Plan and current NRC reporting requirements to identify discrepancies between the information needed and the information required by regulation.

A questionnaire was developed to solicit input from Agreement States and NRC Regions. All four NRC Regions and 21 Agreement States responded. The questionnaire and the responses are summarized in Appendix B.

Under Task 1, the Working Group was asked to review the NRC Strategic Plan and identify the event information needed to implement the Materials Safety and Waste Safety portions of the plan. The results are provided in Appendix C. A total of 14 event information needs were identified. These needs are discussed in Chapter 1. Two significant concerns were identified. One concern involves the measures for significant exposures. The Working Group is concerned that these measures are defined in terms of the consequences of exposures (i.e., deaths and permanent injuries) rather than the occurrence of exposures. NRC and Agreement States review and approve radiation safety programs. The Working Group believes the failure of these programs to prevent exposures is a better measure of our performance as regulators. The ability of an exposed individual to recover from an exposure should not influence our classification of significant exposures. The Working Group recommends establishing a strategic measure for significant exposures defined in terms of specific doses. The second significant concern involves the measure for licensed material entering the public domain in an uncontrolled manner. This measure is so vague that hundreds of mostly insignificant events are being counted. The Working Group recommends that this measure be redefined in terms of unrestricted areas and specific quantities of material. Several recommendations for less significant concerns are also provided.

In addition to the Strategic Plan, the Working Group was asked to review all NRC reporting requirements and determine if information required supports implementation of the Strategic Plan. The results of this review are provided in Appendix D. The Working Group considered the need for each requirement and made several recommendations for improving the requirements and reducing regulatory burden.

Under Task 2, the Working Group was asked to examine guidance to licensees on event reporting. Regulations and guidance documents were found to be good in general, but some regulations and guidance documents were found to be inconsistent, incomplete, and hard to find. The Working Group recommends developing a web page dedicated to event reporting requirements with links to more detailed information. A project manager should be assigned to maintain the site as new regulations and guidance are issued. In addition, the Working Group recommends consolidating the scattered reporting requirements in each part of Title 10 of the Code of Federal Regulations into a subpart that contains or references every reporting requirement in that part.

Under Task 3, the Working Group was asked to review the event information in the Nuclear Materials Events Database (NMED) and recommend how the quantity, quality, and consistency of event information could be improved. The Working Group found that an average of 11% of NMED records for 1999 were incomplete. In addition, the average number of events per licensee was 0.017 for Agreement States as compared to 0.036 for NRC. It is unclear whether these statistics are acceptable. Without knowing what level of quality, quantity, and consistency is acceptable, it is difficult to determine how much improvement is needed. The Working Group recommends that management establish goals for NMED records. Staff should continue to monitor these statistics and periodically brief management on their findings. In addition, management should consider revising regulations to specify all of the information required to complete NMED records.

Under Task 4, the Working Group was asked to identify where internal stakeholder communication and participation can be improved. Questionnaire responses indicated that many Agreement States were unaware of the national goals and measures in the NRC Strategic Plan. The Working Group recommends adding a discussion of the national goals and measures to the guidance for Agreement State event reporting. Questionnaire responses also indicated that many States found it difficult to share reports of significant events with NRC within the 24-hour goal specified in the reporting guidance. The Working Group recommends that Agreement States report significant events to NRC within 48 hours unless there is an immediate safety issue. Events with an immediate safety issue should continue to be reported within 24 hours.

Task 4 also directed the Working Group to review the NMSS Generic Issues Program. The Working Group found that trying to screen event reports for generic issues a few days after the reports are received is inefficient because initial reports are often incomplete, and numerous requests for additional information are burdensome. It is recommended that event reports be reviewed for generic issues 60 days after the initial report is received. Investigation reports will be available at that time and better information will result in better assessments and fewer requests for additional information. In addition, the Working Group found that communication of assessment results to internal stakeholders needs to be improved. The group recommends sending a monthly e-mail over the RadRap system. This would provide timely communication with Agreement States and NRC Regions. It would also provide a mechanism for discussion of the assessment results.

Under Task 5, the Working Group was asked to examine the use of computer systems and address four specific issues. Various systems and their functions are described. In general, the systems work well. The Working Group identified where upgrades and other improvements should be considered. The following recommendations were made for the specific issues:

> **Issue 1:** Should NRC delay posting of event reports on the external NRC web site? The Working Group recommends that NRC delay the posting of Agreement State reports up to 48 hours when requested by the State. If the Agreement States are allowed more time to report events to NRC (as recommended under Task 4), no further delay may be needed.
>
> **Issue 2:** Should NRC continue to use separate event tracking systems in each office, or should one agency-wide tracking system be developed? The Working Group recommends that NRC continue to use separate tracking systems.
>
> **Issue 3:** Should NRC make the Nuclear Materials Events Database (NMED) available to the public? Yes. NMED should be made available to the public.
>
> **Issue 4:** Should NRC participate in the international materials events database being developed by the International Atomic Energy Agency (IAEA)? Yes. NRC should provide reports of significant events to IAEA.

At the request of the Steering Committee, the Working Group ranked each of its recommendations against the four performance goals in the NRC Strategic Plan. The results are provided in Appendix F. We note that this ranking method is inconsistent with our charter. We were tasked with recommending improvements for effectiveness, efficiency, and realism, but the ranking method is governed by the contribution to the safety goal, not the effectiveness goal. The ranking method required one-third of the recommendations to be ranked high under the safety goal. This forced the Working Group members to rank some recommendations higher for safety than they would normally rank them. Readers should note the differences between the final ranking and the ranking under the effectiveness goal.

The Working Group did not estimate the resources required to implement its recommendations. We recognize that our recommendations will be subject to planning and budgeting processes and resource constraints may prevent the implementation of some recommendations.

Working Group On Event Reporting

Members:

Robert Dansereau[1]	New York State Department of Health
Kevin Hsueh	NRC Office of State and Tribal Programs
Harriet Karagiannis	NRC Office of Research
Linda McLean	NRC Region IV
Kevin Ramsey[2]	NRC Office of Nuclear Material Safety and Safeguards
Steve Sandin	NRC Incident Response Organization
Agi Seaton[3]	Computer Sciences Corporation
Mark Sitek	NRC Office of Nuclear Material Safety and Safeguards
Helen Watkins[4]	Texas Bureau of Radiation Control

National Materials Program Steering Committee

Members:

Ed Bailey	Organization of Agreement States
Doug Collins	NRC Region II
Don Cool	NRC Office of Nuclear Material Safety and Safeguards
Jesse Funches	NRC Chief Financial Officer
Joe Gray	NRC Office of the General Counsel
Bob Hallisey	Conference of Radiation Control Program Directors
Bill Kane	NRC Office of Nuclear Material Safety and Safeguards
Paul Lohaus	NRC Office of State and Tribal Programs
Carl Paperiello	NRC Office of the Executive Director for Operations
Cindy Pederson	NRC Region III

[1] Co-Chair, OAS (Organization of Agreement States)

[2] Co-Chair, NRC

[3] Facilitator

[4] Conference of Radiation Control Program Directors

INTRODUCTION

On January 27, 2000, the NRC Office of Nuclear Material Safety and Safeguards (NMSS) formed a Working Group to provide NRC management with recommendations for making the reporting and assessment of material events more effective, efficient, and realistic. Agreement States and NRC Regions have raised concerns that the resources required to submit event reports and respond to requests for additional information are having a significant impact on their programs. In addition, NRC management has a growing perception that certain parts (i.e., briefings, etc.) of the materials event program are inefficient. Although NRC Headquarters conducted a self-assessment in 1999 (see SECY-99-005, Self-Assessment of Operational Safety Data Review Processes), NMSS concluded that a review by the internal stakeholders was needed to address these concerns. The quality of materials event data is important because it is used to measure outcomes and determine if the performance measures in the NRC Strategic Plan (NUREG-1614) have been met.

The Working Group is composed of representatives of State governments and NRC. The Working Group coordinated its efforts with the Steering Committee for the National Materials Program. The charter for the Working Group is provided in Appendix A. A questionnaire was developed to solicit input from the internal stakeholders (i.e., Agreement States and NRC Regions). The questionnaire and responses are provided in Appendix B.

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Task 1 Comparison of NRC Strategic Plan and NRC Reporting Requirements

The Working Group was tasked with reviewing the NRC Strategic Plan and identifying what event information is needed for the Materials Safety and Waste Safety portions of the Plan. The results of our review are provided in Appendix C. We identified the following event data needs:

1.1 Need 1

Deaths from acute exposure to radiation or other hazardous materials. Initially, the Working Group questioned the need for this measure because we regulate exposures and releases far below lethal levels. However, the Steering Committee informed us that many Federal agencies report the number of deaths to Congress and NRC uses this as a common measure for comparing our performance with the performance of other Federal agencies. Although the number of deaths may be appropriate as a measure of our strategic goal, we note that it is difficult to identify deaths from acute exposures. There is no regulation that requires licensees to report deaths. We expect to learn of a death during the investigation of an exposure or release. However, an individual receiving a large radiation dose can linger for many months before succumbing. It is difficult to track and record health consequences over long periods, especially after corrective actions involving the radiation safety program are complete. For medical events involving terminally-ill patients, we must rely on the opinion of a medical consultant to determine whether the radiation caused a premature death. There is a consequence field for exposures in the Nuclear Materials Events Database (NMED), but it is not being used. Information on health consequences is rare and typically recorded in the abstract of the NMED record when it is received.

Note: See Recommendations 1-1, 1-2, 1-3, and 1-4.

1.2 Need 2

Radiation exposures that result in unintended, permanent, functional damage to an organ or a physiological system as determined by a physician. As noted above, it is difficult to identify injuries such as this. There is no regulation that requires licensees to report this finding[5]. We expect to learn of permanent injuries during the investigation of an exposure. We must rely on the opinion of medical consultants because we lack the medical expertise to make this finding. As also noted above, there is a consequence field for exposures in NMED, but it is not being used.

We are concerned that the Strategic Goal is defined in terms of the consequence of an exposure rather than the occurrence of an exposure. We recognize the benefit of providing Congress with a measure similar to measures provided by other Federal agencies. However, we regulate exposures, not deaths and illnesses. The radiation safety programs that we review and approve are designed to prevent harmful exposures. If a significant exposure occurs, we need to address why the radiation safety program failed to prevent it, regardless of the health consequences. If we succeed in preventing harmful exposures, the natural result will be no deaths or injuries.

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[5] Proposed changes to Part 35 would require reports of permanent functional damage, but only for events involving patient intervention and nursing children (see proposed sections 35.3045 and 35.3047).

We believe measuring exposure consequences leads to inconsistent and misleading results. It is possible that an individual could receive an exposure of 50 rem total effective dose equivalent (TEDE) and recover without any permanent, functional damage. Under the current strategic measures, this would not be counted as a significant exposure. It would be treated the same as a 5 rem TEDE exposure and counted under the performance measures as a routine overexposure. We believe that a 50 rem exposure is much more significant than a 5 rem exposure and should be counted as a significant exposure. In addition, individuals can respond differently to the same dose. One individual may recover and another individual may not. Under current strategic measures, only one of these cases would be counted as a significant exposure.

An additional concern is the process used to identify events resulting in permanent, functional damage. NRC staff must follow detailed procedures in Management Directive 8.10, "NRC Medical Event Assessment Program," and Inspection Manual Chapter 1360, "Use of Physician and Scientific Consultants in the Medical Consultant Program." These procedures define when and how an independent medical consultant must be used by NRC staff. However, there is a lack of similar guidance for Agreement States. It appears that Agreement States often accept the findings of the licensee's physician without requesting a second physician to review the case as an independent medical consultant. The Working Group does not believe this is a significant problem, but it raises questions about the consistency of regulatory follow-up actions between different regulatory programs, especially since the majority of medical events occur in Agreement States

Note: See Recommendations 1-1, 1-2, 1-3, and 1-4.

1.3 Need 3

Hazardous material exposures that result in unintended, permanent, functional damage to an organ or a physiological system as determined by a physician (applies to fuel cycle and uranium recovery activities only). The concerns noted above also apply to this need. Reporting requirements were recently added to Part 70 for acute chemical exposures, but there are no similar requirements in Part 40 (for uranium conversion plants) nor Part 76 (for uranium enrichment plants). The Part 70 standard is acute chemical exposures that could lead to irreversible or other serious, long-lasting health effects. This differs from the NRC Strategic Plan because it involves a potential effect, not an actual effect. We believe the Part 70 standard is better because it allows the staff to use exposure standards established by the industry and does not require a medical evaluation of each individual exposed.

Recommendation 1-1: We suggest that management consider revising the NRC Strategic Plan to add a measure for significant exposures exceeding specific levels without any reference to damage (i.e., 25 rem TEDE, chemical levels immediately dangerous to life or health (IDLH), etc.). We believe that the *occurrence* of significant exposures is a better measure of our performance as regulators. The ability of an individual to recover from an exposure should not influence our classification of the exposure as a significant event. **(High priority)**

Recommendation 1-2: Revise the NMED procedures to start using the consequence field for exposures and establish standard codes for deaths and various injuries. In addition, consider guidance that licensees should include information on any deaths or injuries resulting from acute exposures in their written reports. **(Medium priority)**

Recommendation 1-3: Consider rulemaking to add reporting requirements similar to Appendix A of Part 70 to Parts 40 and 76. **(Medium priority)**

Recommendation 1-4: Establish guidance for Agreement States on when and how independent medical consultants should be used to identify exposures resulting in permanent, functional damage. This can be addressed during the implementation of new Part 35 requirements. **(Low priority)**

1.4 Need 4

Releases that cause an adverse impact on the environment. "Adverse impact" is undefined, but we have been using Criteria I.B.1 of the abnormal occurrence criteria (release to an unrestricted area in concentrations which, if averaged over 24 hours, exceed 5000 times Table B-2 of Appendix B to Part 20). This criteria was recently added to Part 70 under Section 70.61(c)(3), but there are no similar requirements in the other parts. We expect to learn of such releases during the investigation of reports under 10 CFR 20.2202 and other regulations. These regulations are sufficient to identify the few releases that need to be considered under this measure.

1.5 Need 5

Safeguards events specified in Appendix G of Part 73, and loss, theft, or unauthorized production of enriched uranium as specified in 10 CFR 74.11(a). This measure is defined in terms of existing regulations and nothing appears to be missing or unneeded.

1.6 Need 6

Security events specified in 10 CFR 95.57. This measure is defined in terms of existing regulations and nothing appears to be missing or unneeded.

1.7 Need 7

Licensed material entering the public domain in an uncontrolled manner. This measure is especially troublesome for the staff because it is so vague. There are several regulations that require licensees to report events involving uncontrolled material, but there is no threshold for the amount of material involved. In addition, the term "public domain" is undefined. It requires a good deal of staff interpretation to determine which events should be counted. This results in hundreds of mostly insignificant events being counted. It is difficult to validate the results because hundreds of interpretations can rarely be duplicated.

Recommendation 1-5: The NRC Strategic Plan should be revised to define public domain as including unrestricted areas. "Unrestricted area" is defined in the regulations. In addition, the measure should define what quantity of uncontrolled material is significant. We suggest the thresholds specified in 10 CFR 20.2201(a)(1)(i) for immediate reports. **(Low priority)**

1.8 Need 8

Occurrences of accidental criticality. We believe a criticality accident is too catastrophic for a performance measure. This would be more appropriate as a strategic measure. The loss of criticality controls would be a better performance measure.

> **Recommendation 1-6:** Consider revising the NRC Strategic Plan to establish accidental criticalities as a strategic measure and loss of criticality controls as a performance measure. **(High priority)**

1.9 Need 9

Exposures that exceed limits in 10 CFR 20.2203(a)(2). This measure is defined in terms of existing regulations and nothing appears to be missing or unneeded.

1.10 Need 10

For fuel cycle facilities, overexposures from radioactive materials extends to other hazardous materials consistent with the amendments to 10 CFR Part 70. Reportable chemical exposures are those that exceed license commitments. It would also include chemical exposures involving uranium recovery activities under the Uranium Mill Tailings Radiation Control Act. This performance measure is a little confusing because it refers to radiation exposures only, but the endnote states that it includes chemical exposures. As noted above, requirements for reporting chemical exposures have been added to Part 70, but not to Parts 40 and 76. See Recommendation 1-3.

> **Recommendation 1-7:** Consider revising the performance measure to state "radiation *and hazardous material* exposures" similar to the strategic measure for exposures. **(Low priority)**

1.11 Need 11

Medical events as reported under Part 35. This measure is defined in terms of existing regulations and nothing appears to be missing or unneeded.

1.12 Need 12

Releases reportable under 10 CFR 20.2203(a)(3). This measure is defined in terms of existing regulations and nothing appears to be missing or unneeded.

1.13 Need 13

Chemical releases from NRC regulated activities under the Uranium Mill Tailings Radiation Control Act that cause impacts on the environment that can't be mitigated within applicable regulatory limits, using reasonably available methods. There is no regulation that requires licensees to report such releases, however we expect to learn of them during the investigation of releases and contamination events reported under 10 CFR 20.2202 and 40.60(b)(1). If chemical safety requirements similar to Appendix A of Part 70 are added to Part 40, these releases could also be identified under those requirements (see Recommendation 1-3).

We question the benefit of a performance measure equal to zero. It may be appropriate to have strategic measures equal to zero, but we believe a performance measure must be visible (i.e., greater than zero) to identify trends and adjust performance. If we do not expect these types of releases to occur, the threshold may too high to be useful.

> **Recommendation 1-8:** Consider revising the NRC Strategic Plan to establish performance measures greater than zero. For chemical releases from milling and mining operations, we suggest measuring the number of chemical releases that require mitigation of environmental impacts. If a significant increase in the number of releases is detected, actions can be taken to adjust performance before a release occurs that cannot be mitigated. **(Low priority)**

1.14 Need 14

Substantiated cases of attempted malevolent use of source, byproduct, or special nuclear material. There is no regulation that requires licensees to report such events. It is expected that we would learn of these events during the investigation of releases, exposures, and other reportable events. In 1997, the Commission rejected a proposed rule to report intentional, unauthorized use of licensed material (see SECY-97-045, Staff Requirements Memorandum, dated April 17, 1997).

The Working Group was also tasked with reviewing current NRC reporting requirements (and associated Agreement State compatibility assignments) and determining whether the information required supports implementation of the NRC Strategic Plan. The results of our review are provided in Appendix D. There are a significant number of reporting requirements that do not appear to meet any of the event data needs identified in the NRC Strategic Plan. The Working Group considered the significance of each reporting requirement and recommended changes to several regulations.

> **Recommendation 1-9:** Consider the reporting requirement recommendations in Appendix D and assign rulemaking actions to extend reporting times, clarify reporting requirements, and reconsider the need for reports of insignificant events. **(High priority)**

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Task 2 Licensee Guidance and Agreement State Guidance

The Working Group was asked to examine guidance provided to licensees on event reporting and consider whether improved guidance would improve event reporting. The results of the group's review are provided below.

2.1 Availability and Adequacy of Guidance

Primarily, the Working Group consensus was that existing NRC guidance documents on reporting requirements are good but need to be made more accessible. There appeared to be broad agreement that the guidance available is adequate and appropriate, however, it could be updated and improved. A questionnaire distributed to Agreement States and NRC Regions supported this conclusion.

Discussions indicated that violations and compliance enforcement actions associated with reporting requirements were few and centered around failure to submit reports within the required time-frames. Issues related to the content or completion of reports seemed more significant. The quality of reports is addressed in detail under Task 3 of this report.

2.2 Awareness and Accessibility of Guidance

As Working Group discussions progressed and input was obtained from NRC management and an NRC group tasked to explore the Working Group charter, a determination was made that not as much focus seemed to be required on this particular task as was outlined in the original draft Working Group charter. The directive of the Working Group to examine "Is there adequate guidance?" moved to discussions of "How readily available or easily accessible is the guidance that already exists?" The task was reformulated and the ability to provide guidance in a "user friendly" manner arose as a chief objective. Ease of access discussions centered around 1) electronic innovations; and 2) consistency of format and terminology in the regulations and in guidance documents.

2.3 Review of Existing Guidance

2.3.1 NRC Guidance Documents to Licensees

Currently, NRC presents consolidated guidance to materials licensees in the NUREG-1556 series of documents. The series contains twenty volumes. The NUREGs are available on the Internet at the NRC web site (http://www.nrc.gov/NRC/NUREGS/ indexnum.html). Reporting requirements can be found in these documents, but not easily. The NUREGs are lengthy and detailed narratives. Concerns were expressed that 1) the location of reporting guidance in NUREG-1556 volumes is inconsistent; and 2) the content of guidance in NUREG-1556 volumes is incomplete. Some volumes contain an overview of reporting requirements in tabular form. A review of the NUREGs revealed there is no uniform way or consistent manner in which the reporting requirement information is presented. In some cases, a table may appear midway through the text; in other cases, it may be included as an Appendix or as a note box in a figure.

Volume 2 of NUREG-1556 (Industrial Radiography) contains an example of the incomplete guidance contained in the NUREG-1556 documents. (The internet address is http://www.nrc.gov/NRC/NUREGS/SR1556/V2/index.html.) A review of Section 8.10.9.10 found that only 2 of the 4 requirements in 10 CFR 30.50(b) are listed in the table. The unlisted reporting requirements involve contamination. Although these events are infrequent, the licensee would still be required to report a contamination incident resulting from a damaged or leaking source.

We believe the guidance should list all of the reporting requirements applicable to a licensee, even for infrequent incidents. In addition, it would be useful to provide examples of reportable events for each requirement. The statements of consideration published in the *Federal Register* when these regulations were issued typically contain discussions and examples. If a dedicated web page is established for reporting requirements, links to the statements of consideration for each reporting requirement could be provided.

Further discussions centered around the development of a dedicated web page. There were a number of descriptions of problems associated with making guidance documents more readily available to stakeholders. Concerns were expressed about the resource allocations needed to maintain and update a web site. Further, there was concern that some stakeholders may not be electronically equipped. However, the recommendation to provide more visible links on web pages, whereby reporting requirements could be easily searched for and accessed via the computer, received strong support. The electronic links and web site redesign is aligned with commitments to the Strategic Plan. This also fits with the goal to improve communications and acceptability.

NUREG-1460, “Guide to NRC Reporting and Recordkeeping Requirements,” was published in November 1992. It includes an index of the reporting requirements codified in Title 10 of the Code of Federal Regulations that were applicable at that time. A master index of reporting requirements can be useful (see Appendix D), but only a few of the requirements are applicable to any single licensee. It would be best if a licensee could access a smaller list containing only the requirements applicable to its activities. In addition, constant rulemaking activities may make maintenance of a master index difficult, particularly if it is published in hard copy. This concern is best illustrated by referring to the master index published in NUREG-1460. NUREG-1460 was last updated in 1994 and numerous requirements have changed since that time. Even Appendix D of our report will need to be updated for the new Part 35 a few months after our report is issued. The goal of providing an electronic index to guide users through the “scattered maze” of reporting requirements may be practicable.

The most comprehensive and up-to-date guidance document on the content needed for a complete report is provided in the Office of State and Tribal Program’s (STP) Procedure SA-300, “Reporting Material Events,” and the appendix, “Handbook on Nuclear Material Event Reporting in the Agreement States.” SA-300 is intended for Agreement States, but is also used by NRC Regions. The document contains a “minimum basic information sheet” that specifies what is needed for a complete report. This basic information sheet could be placed on a dedicated reporting requirement web page, along with an electronic link to the SA-300 document. An updated draft procedure and handbook for review and comment are posted on the NRC STP external web site at http://www.hsrd.ornl.gov/nrc/home.html.

2.3.2 Guidance in NRC Regulations (10 CFR)

Currently, guidance is offered in sections of the regulations specific to a certain type of licensee. A review of the regulations determined the reporting requirements are scattered throughout 10 CFR and difficult to find. The reporting requirements are conveniently presented as a subpart in some Parts. Even so, some of the listings are incomplete in that the list may not contain all of the reporting requirements in that Part. Table 2-1 lists reporting requirements that are not located in a subpart Reports Section.

Table 2-1 Reporting Requirements Not Found in a Subpart Reports Section.

10 CFR	Reporting Requirement	Recommendation
20.1906(d)(1) (d)(2)	(Immediate report) Removable contamination on package (Immediate report) Radiation levels on package	Locate or reference both in Reports Section (Subpart M)
20 App. G III.D.3	(60-day report) Notification of missing shipment of radioactive waste (made by land disposal operator)	Locate or reference in Reports Section (Subpart M)
20.App. G III.E.2	(2-week report) Written report of trace investigation of missing shipment (made by shipper)	Locate or reference in Reports Section (Subpart M)
26.27(d)	(Immediate report) Notification of NRC employee's unfitness for duty	Locate or reference in Reports Section (26.73)
30.9(b)	(2-day report) Receipt of any information having significant implication for public health and safety	Locate or reference in Reports Section (30.50 series)
30.34(h)	(Immediate report) The filing of any petition for bankruptcy by or against the licensee, its parent, or an affiliate	Locate or reference in Reports Section (30.50 series)
31.5(c)(5)	(30-day report) Failure of, or damage to; or indication of possible failure of, or damage to the shielding, on-off mechanism, or indicator; or detection of 0.005 microcuries of removable RAM	Consider establishing Reports Section in Part 31 including this report plus a clear list of all the reports invoked by 31.2(a) and 31.5(c)(13)(ii).
34.27(d)	(5-day report) Radiography sealed source leak test results (presence of 0.005 microcuries or more of removable RAM)	Locate or reference in Reports Section (Subpart F)
35.33(a)(1)	(1-day report) Medical misadministration	*Note: New Part 35 establishes a Reports Section (Subpart M)*
39.35(d)(2)	(5-day report) Well logging sealed source leak test results (presence of 0.005 microcuries or more of removable RAM)	Locate or reference in Reports Section (Subpart E)
40.9(b)	(2-day report) Information having a significant implication for public health and safety or common defense and security	Locate or reference in Reports Section (40.60 series)

10 CFR	Reporting Requirement	Recommendation
40.26(c)(2)	(Immediate report) Failure, or unusual conditions that if not corrected could lead to failure, in a tailings or waste retention system that results, or could result in, release of tailings or waste into unrestricted area	Locate or reference in Reports Section (40.60 series)
40.41(f)	(Immediate report) The filing of any petition for bankruptcy by or against the licensee, its parent, or an affiliate	Locate or reference in Reports Section (40.60 series)
40 App A I Criterion 8A	(Immediate report) Failure or unusual conditions in a tailings or waste retention system [that could result in, or if left uncorrected could result in, the release of tailings or waste into unrestricted areas]	Locate or reference in Reports Section (40.60 series).
60.10(b)	(2-day report) Information having a significant implication for public health and safety or common defense and security	Locate or reference in Reports Section (Subpart D)
70.9(b)	(2-day report) Information having a significant implication for public health and safety or common defense and security	Locate or reference in Reports Section (Subpart G)
70.32(a)(9)	(Immediate report) The filing of any petition for bankruptcy by or against the licensee, its parent, or an affiliate	Locate or reference in Reports Section (Subpart G)
71.6a(b)	(2-day report) Information having a significant implication for public health and safety or common defense and security	Locate or reference in Reports Section (71.95)
72.11(b)	(2-day report) Information having significant implication for public health and safety or common defense and security	Locate or reference in Reports Section (Subpart D)
72.44(b)(6)	(Immediate report) The filing of any petition for bankruptcy by or against the licensee, its parent, or an affiliate	Locate or reference in Reports Section (Subpart D)
73.26(i)(6)	(Immediate report) Failure to receive call at the movement control center from shipment or escort personnel (road shipment)	Locate or reference in Reports Section (73.70 series)
73.26(k)(4)	(Immediate report) Failure to receive call at the movement control center from shipment or escort personnel (rail shipment)	Locate or reference in Reports Section (73.70 series)
73.27(b)	(Immediate report) Lost or unaccounted for shipment of SSNM [made by licensee receiving formula quantities of strategic SNM]	Locate or reference in Reports Section (73.70 series)
73.27(b)	(Immediate report) Lost or unaccounted for shipment of SSNM [made by licensee who is consignor when consignee is DOE license-exempt contractor receiving formula quantities of SSNM]	Locate or reference in Reports Section (73.70 series)
74.57(c)	(24-hour report) Notification of unresolved material control & accounting alarm	Locate or reference in Reports Section (Subpart B)

10 CFR	Reporting Requirement	Recommendation
74.57(f)(2)	(24-hour report) Notification of initiation of MC&A alarm resolution procedure [when abrupt loss detection estimate exceeds 5 formula kilograms of SSNM]	Locate or reference in Reports Section (Subpart B)
76.9(b)	(2-day report) Information having significant implication for public health and safety or common defense and security	Locate or reference in Reports Section (Subpart F)
110.7a(b)	(2-day report) Notification of information having a significant implication for public health and safety or common defense and security	Establish Reports Section (suggest Subpart E) and locate or reference in that section
110.50(a)(7)	(Prompt report) Notification of violation or potential violation of packaging requirements of 10 CFR 71	Establish Reports Section (suggest Subpart E) and locate or reference in that section

Some discussions centered around the confusion that may result if guidance is consolidated in a single document or table that contains references to many sections of the regulations that may be unrelated to a particular licensee's operations. The consolidated manner of presentation would seem more useful for broad scope licensees and regulators as stakeholders. Consolidating all 10 CFR reporting requirements in one place within the regulations was not favored. It would be difficult to explain which requirements applied to which licensees. It was thought to be a good idea to consolidate all reporting requirements within each Part. Placing one section in each Part that either contained or referenced every reporting requirement in that Part, would help minimize confusion. A look at Appendix D shows that reporting requirements are often scattered within the same Part of 10 CFR.

It would be useful to provide licensees with a discussion of each reporting requirement and examples of reportable events. The rulemaking that established each reporting requirement often contains such information in the statements of consideration.

2.3.3 General Guidance

Guidance to stakeholders is provided in several other forms, including license conditions that sometimes contain references to regulations, newsletters, regulatory conferences, workshops, during inspections, and web sites. These represent numerous tools to maintain awareness. The consistency and frequency of use of these tools vary.

2.4 Is Rulemaking Required?/Would Better Guidance Improve Event Data?

Currently, rulemaking is in a dynamic period and presents an opportunity for modifications. NRC's new Part 35 was raised as an example of an opportunity to improve on how guidance is presented. A thorough discussion of the impact rulemaking could have on improving reports that are submitted is presented under Task 3. Essentially, the Working Group concluded that items deemed necessary for a complete report should be required by rule. Further, the Working Group concluded that consistency of terminology should be focused on as rules are revised.

RECOMMENDATIONS

The “user friendly” consideration led to the Working Group’s three recommended suggestions for improvement. These suggestions contain “ease of access” elements that would appeal to a variety of interests.

Recommendation 2-1: Develop consistent format and terminology in licensing guidance (i.e., standard review plans, standard format and content guides, etc.). Each volume of NUREG-1556 should have guidance on event reporting in an appendix. Standard formatting and terminology guidelines should be established. All applicable reporting requirements should be addressed, even if the event occurs infrequently. Licensing guidance documents for fuel cycle facilities and other activities not addressed by NUREG-1556 should also have an appendix on event reporting. A pull-out page for use and distribution by inspectors could be a part of the appendix. This could be undertaken as NUREGs pertaining to licensing are revised. **(High priority)**

Recommendation 2-2: Establish a subsection in each Part of 10 CFR that contains or references all reporting requirements in the Part. Specific changes are identified in Appendix D. This could be accomplished as an administrative change and issued as a direct final rule. (*Note:* Agreement State regulations tend to be more consolidated than 10 CFR, but States should also consider the need to consolidate.) **(High priority)**

Recommendation 2-3: Create a dedicated web page for basic reporting requirement information with electronic links to more detailed information. It should have a search function that identifies the reporting requirements applicable to different activities. Assign a project manager to maintain the site as new regulations are issued. Withdraw NUREG-1460 from circulation. We believe maintaining a web site would be a more effective use of resources than maintaining a hard copy index of all reporting requirements. The web page should include links to the *Federal Register* statements of consideration applicable to each reporting requirement. (Proposed rules may contain better explanations than final rules.) Additional examples and guidance can be added to the page as appropriate. **(High priority)**

Task 3 Enhance NMED Reporting

3.1 Current Event Reporting Process

NRC's Nuclear Materials Events Database (NMED) contains records of events involving nuclear materials reported to NRC by NRC licensees, Agreement States, and by non-licensees. NMED contains NRC's historical collection of information on the occurrence, description, and resolution of events involving the use of nuclear materials in the United States. The database is maintained by NRC through a contractor, Idaho National Engineering and Environmental Laboratory (INEEL), and contains more than 10,000 records of materials events reports submitted to NRC since January 1990.

NRC and Agreement State regulations governing the use of licensed material include requirements to report specific off-normal conditions, or events to NRC or the respective State agency. For NRC licensees, the requirements are contained in Title 10 of the Code of Federal Regulations (CFR). Agreement State programs have compatible regulations that apply to their respective licensed programs.

Material events reported pursuant to a specific 10 CFR reporting requirement, or equivalent Agreement State reporting requirement, are referred to as reportable events. The Adequacy and Compatibility policy for Agreement States require Agreement States to provide reportable event information to NRC on a periodic basis. Reports of off-normal conditions or events submitted to NRC by NRC licensees, Agreement States, and non-licensees that do not fall within the scope of reporting regulations, are referred to as voluntary reported events. Agreement States are encouraged to report voluntary reported events to NRC, where a determination is made that the event information could have generic implications.

3.1.1 Process for entering NRC event information into NMED system

For NRC events, documentation of prompt, telephonic reports to the NRC Operations Center, copies of licensee reports, NRC inspection reports, and other documents (ENs, PNs, etc.) are provided to the NMED contractor. Using these documents, the NMED contractor enters data into the NMED system.

3.1.2 Process for entering Agreement State event information into NMED system

Agreement States receive event information from Agreement State licensees that is compatible with the information provided by NRC licensees under applicable, compatible Agreement State regulatory reporting requirements.

Agreement States are requested to report significant events (requiring 24-hour or less notification by an Agreement State licensee) to the NRC Operations Center, within 24 hours or less of notification by an Agreement State licensee. Agreement States are requested to report the events by telephone or FAX to the NRC Operations Center. Significant event information initially reported to the NRC Operations Center will be entered into NMED by the NMED contractor.

Agreement States are requested to report events (requiring 5-, 15-, 30- or 60-day notification by an Agreement state licensee) to NRC within one month of notification of the occurrence of an event by an Agreement State licensee, member of the public, or other agency. Agreement States are also requested to provide follow-up and close-out information on all reportable events to NRC so that a complete and accurate record is available in NMED.

Agreement States provide to NRC (NMED contractor or STP) written or electronic event reports which may include: copies of licensee reports to Agreement States, copies of Agreement State inspections/investigations, consultant reports, or hard copies of NMED data sheets or electronic NMED reports. Some Agreement States transmit the reports electronically to the NMED contractor and some send hard copy reports to the STP, who distributes them through the NRC document control system to the NMED contractor for entry into NMED.

Guidance on Agreement State reporting of events to NRC is contained in the Appendix, "Handbook on Nuclear Material Event Reporting in the Agreement States," to the STP procedure STP SA-300, "Reporting Material Events."

3.2 Integrated Materials Performance Evaluation Program (IMPEP) Review of Event Reporting

The purpose of IMPEP is to evaluate NRC Regional materials programs and Agreement State radiation control programs in an integrated manner to ensure that public health and safety are being adequately protected. This program is authorized by Management Directive 5.6, Integrated Materials Performance Evaluation Program. It provides NRC and Agreement State management a systematic evaluation of program strengths and weaknesses, and provides input on areas requiring more resources or management attention.

The output from an IMPEP review is a report on the adequacy of a program. The report may include information and recommendations that can be used to improve the effectiveness and efficiency a regulatory program.

IMPEP identifies five common and several non-common performance indicators to be used in reviewing both NRC Regional and Agreement State programs. Event reporting is evaluated under one of the common performance indicators: Response to Incidents and Allegations.

3.3 Description of Areas that need Improvement and Recommendations

3.3.1 Improve the quality and consistency of NMED event information

The NMED contractor reviews both NRC and Agreement State NMED event information for completeness. If the information in the NMED records is not complete, the NMED contractor initiates a request for additional information by sending an e-mail directly to the Agreement State staff or NRC Regional Office staff, with copies of the e-mail sent to both the STP event project manager and to the NMSS NMED project manager.

The Working Group reviewed a list of requests from the NMED contractor to NRC Regional Office staff and Agreement State staff for events that occurred in 1999. The list contains the status of 148 requests which were sent by the NMED contractor in the period between October 1999 and May 2000. Each request is associated with a single NMED event, and it was found that the ratio

of Agreement State versus NRC event requests is 93 to 55. Detailed information such as NMED event number, event date, and status for each request is documented in Appendix E, Tables E-1 and E-2.

The Working Group reviewed the NMED records of these events on June 16, 2000 and November 13, 2000, and found that as of November 13, 2000, there were approximately 24 (6%) of NRC and 44 (18%) of Agreement State NMED records that were awaiting additional event information. A statement that additional information for this event has been requested by the INEEL can be found in the abstract of each NMED record that needs additional information. The statistics of NRC and Agreement State NMED records, the total number of events that need additional information, and the total number of NMED records that are awaiting additional information is summarized in Table 3-1. It appears that there was an average of 11% of NMED records that contain incomplete event information for events that occurred in 1999.

Table 3-1 Statistics on NMED records for all reportable events that occurred in 1999, including events pending additional information.

NRC/ Agreement State Events	Number of NMED reportable events with event dates listed between 1/1/99 and 12/31/99	Number of events that need additional information requested by NMED contractor *	Number of NMED event reports that are awaiting additional information to be closed out.	
			As of 6/16/00	As of 11/13/00
NRC	392	55 (14%)	28 (7%)	24 (6%)
Agreement States	241	93 (39%)	50 (20%)	44 (18%)
Total	633	148 (23%)	78 (12%)	68 (11%)

* The average period of time between event date and the NMED contractor request for additional information is ~ 5 months.

The Working Group further reviewed a total of 62 e-mail requests. Each request contains a list of items documenting event information that is needed to complete the NMED record. The type of event information that is missing and the percentage of the requests that ask for the specific type of event information is shown in Table 3-2. Detailed information found in the requests regarding the type of event information that is missing can be found in Appendix E, Tables E-1 and E-2. It appears that corrective actions and cause of the event are the two major pieces of event information that are most frequently requested by the NMED contractor to complete NMED records.

Table 3-2 Type of Event Information needed to complete NMED records.

No.	Type of Event Information (Percentage: number of requests/62)
1	Corrective actions (89%)
2	Cause of the event (52%)
3	Source activity level (38%)

No.	Type of Event Information (Percentage: number of requests/62)
4	Equipment model number and serial number (30%)
5	Isotope of concern (20%)
6	License number (13%)
7	Others (contamination survey results, personnel exposure results, etc.) (13%)
8	Source model number and serial number (11%)
9	Manufacturer (11%)

The Working Group also examined the event reporting requirements for the 62 events that need additional information. A list of reporting requirements and the total number of requests with events reported to NRC or Agreement States based on certain reporting requirements is summarized in Table 3-3. It is noted that more than 50% of the 62 events are either 10 CFR 20.2201(a)(1)(i) or 30.50(b) reportable events.

Although the major event information required to complete the NMED records can be clearly itemized as listed in Table 3-2, it was noted that each section of 10 CFR that deals with instructions for preparation of written reports has its own unique way of describing the kind of event information that needs to be included in the reports, with no consistency across the sections. The information submitted by the licensees in the 5-, 15-, 30- or 60-day routine event report may not cover all the items required for a complete NMED record, because some event information is not required to be included in the written reports, according to instructions found in the 10 CFR reporting requirements. The use of terminology also varies from section to section. For example, the term “isotope and activity,” used in an NMED record, is stated as “kind and quantity of the licensed material” in 10 CFR 20.2201, “radioactive material and the levels of concentrations of radioactive material” in 10 CFR 22.2203, “radionuclide and its quantity” in 10 CFR 39.77, and “isotopes and quantities” in 10 CFR 30.50.

Other findings regarding event information that is needed for completeness of NMED records but is not explicitly stated in the regulations are as follows:

1. 10 CFR 20.2201(b) does not require licensees to submit event information regarding the cause of the event, and equipment model number and serial number.

   Note: Most of the 21 requests for additional information under 10 CFR 20.2201(a)(1)(i) or (ii) involved the cause of the event, and equipment model number and serial number (see Table 3-3).

2. 10 CFR 21.21(d)(4) does not require licensees to submit event information regarding the cause of the event.

3. 10 CFR 30.50(c)(2) does not require licensees to submit event information regarding the equipment serial number, and source model number and serial number.

   Note: Most of the 18 requests for additional information under 10 CFR 30.50(b) involved equipment serial number, source model number, or source serial number (see Table 3-3).

4. 10 CFR 34.101(b) does not require licensees to submit event information regarding the isotope of concern, equipment serial number, source activity level, source model number, and serial number.

5. 10 CFR 35.33(a)(2) does not require licensees to submit event information regarding the isotope of concern and source activity level.

6. 10 CFR 39.77(d) does not require licensees to submit event information regarding source model number and serial number, and the name of the manufacturer.

Table 3-3 Event Reporting Requirements for the Events Pending Additional Information.

Reporting Requirements		No of* requests	Notification
20.1906(d)(1)	removable contamination on package > limits in 10 CFR §71.87.	1	Immediate
20.1906(d)(2)	radiation levels on package > limits in 10 CFR §71.47.		
20.2201(a)(1)(i)	reports of theft or loss of licensed material >= 1000 X App. C value.	1	Immediate
20.2201(a)(1)(ii)	reports of theft or loss of licensed material >= 10 X App. C value.	19	Immediate
20.2202(a)(1)	exposure (real or threatened) >= TEDE of 25 rems (0.25 Sv), or eye	2	30 day
	or lens dose equivalent of 75 rems (0.75Sv), or shallow dose equivalent (skin/extremities) of 250 rads (2.5 Gy).	1	Immediate
20.2202(b)(1)	exposure (real or threatened) >= TEDE of 5 rems (0.05 Sv), or eye or lens dose equivalent of 15 rems (0.15 Sv), or shallow dose equivalent (skin/extremities) of 50 rads (0.5 Sv).	2	24 hour
20.2203(a)(2)	radiation exposure, radiation levels, and concentrations of radioactive material exceeding the constraints or limits.	2	30 day
21.21(d)(3)(i)	reporting defects and failures to comply associated with substantial safety hazards for dedicated items.	1	2 day
30.50(a)	prevention of immediate protective actions that could exceed regulatory limits.	2	4 hour
30.50(b)	unplanned contamination restricting access > 24 hours (no isotope with half-lives < 24 hours). Equipment failure or disability to function as designed when equipment is required to be available and operable and no redundant equipment is available and operable.	18	24 hour
30.55(c)	Tritium reports.	1	15 day
34.101(a)	radiography source disconnect, inability to retract source, or component failure (critical to safe operation of device).	3	30 day
35.33(a)(2)	notifications and reports of misadministrations.	3	15 day
39.77(d)	well logging source rupture, irretrievable source, abandonment.	1	30 day
Others (unknown, 49CFR requirements, non-reportable events).		9	

*Reportable events may contain more than one reporting requirement.

The Working Group found that a lot of the e-mails from the NMED contractor request event information that is not explicitly stated in the regulation, but is required for completeness of NMED records. Since the submission of the event information is not required by regulations, NRC may never receive additional information to close out these NMED records.

Currently, the event information needed to complete the NMED records is requested by the NMED contractor. However, the contractor does not have effective mechanisms to obtain the follow-up event information in a timely manner. Since the frequency of Agreement State and NRC Region IMPEP reviews is once every four years, the use of IMPEP reviews may not be an effective mechanism to ensure that follow-up event information is provided to the NMED in a timely manner.

Recommendation 3-1: Management should establish acceptable goals and performance levels for the completeness of the NMED records. It is difficult to determine how much improvement is needed without knowing what level of quantity, quality, and consistency is acceptable. We suggest a goal of 100 percent complete for events counted under the NRC Strategic Plan. For other events, we suggest a goal of 95 percent complete. **(Medium priority)**

Recommendation 3-2: The instructions in 10 CFR for the preparation of written reports should be revised as rulemaking takes place to specify that reports include root causes, equipment serial numbers, and other important pieces of information. The regulations should have consistent formats and terminology across sections containing reporting requirements. Event information that is required for completeness of the NMED records needs to be explicitly stated in the instructions for preparing written reports. **(Medium priority)**

NMED was developed by the former NRC Office for Analysis and Evaluation of Operational Data (AEOD) as a tool to help satisfy office responsibilities contained in 10 CFR Part 1. These responsibilities included (1) analyzing and evaluating operational safety data to identify safety issues that require follow-up action, and (2) providing timely feedback to NRC staff, licensees, Congress, and the public. The design of the NMED system and the use of NMED data has evolved significantly over the last five years. The Office of AEOD was abolished and its responsibilities were assigned to other NRC offices. The NRC Strategic Plan was developed and several performance measures were defined in terms of event data contained in NMED. The ongoing development of a National Materials Program and other issues have raised questions about the purposes and uses of NMED in today's regulatory environment.

The Steering Committee commented that it would be helpful to have a clear articulation of the purposes of NMED and an analysis based on meeting those needs. This effort should lead to a linkage between what is requested in an NMED record, and what is needed from each regulatory perspective. The Working Group agrees that this information would be useful, but our efforts have been focused on other areas and we believe there are many different opinions on how NMED should be used. We believe it would be better to address this matter in the rulemaking plan to implement Recommendation 3-2. The resulting regulatory analysis would justify the need for changes to the regulations.

Recommendation 3-3: Staff should periodically brief management on the NMED statistics on incomplete records as shown in Table 3-1. In the briefing, staff needs to examine the effectiveness of current mechanisms to ensure that the NMED records are complete, and make recommendations for improvements. **(Medium priority)**

3.3.2 Improve the quantity of the NMED records

The Working Group reviewed the number of Agreement State NMED reportable events from 1997 to 1999. The number of Agreement State events and the ratios of reportable events to total number of licensees is listed in Table 3-4. It appears that the average Agreement State event reporting rate is about 1.7%. The number of reportable events for each Agreement State for the same period of time is listed in Table 3-4. The reporting rate for each Agreement State ranges from 0% to about 4.4%.

Table 3-4 Number of Agreement State Reportable Events from 1997 to 1999.

No.	State	Number of Agreement State Events (ratio of reportable events to total number of licensees)			No. of Agreement State Licensees* As of 5/12/1998
		1997	1998	1999	
1	AL	7 (1.7%)	7 (1.7%)	4 (1.0%)	404
2	AR	2 (0.8%)	7 (2.7%)	1 (0.3%)	262
3	AZ	3 (0.8%)	5 (1.4%)	8 (2.3%)	353
4	CA	30 (1.4%)	24 (1.1%)	15 (0.7%)	2100
5	CO	9 (2.6%)	5 (1.4%)	7 (2.0%)	348
6	FL	21 (1.8%)	33 (2.9%)	33 (2.9%)	1144
7	GA	8 (1.6%)	9 (1.6%)	3 (0.6%)	500
8	IA	0 (0.0%)	2 (0.9%)	2 (0.9%)	215
9	IL	18 (2.1%)	28 (3.3%)	37 (4.3%)	857
10	KS	0 (0.0%)	5 (1.6%)	3 (0.9%)	322
11	KY	5 (1.2%)	3 (0.7%)	0 (0.0%)	403
12	LA	4 (0.8%)	7 (1.4%)	11 (2.2%)	511
13	MA	10 (2.3%)	4 (0.9%)	7 (1.6%)	435
14	MD	12 (2.1%)	6 (0.9%)	5 (0.9%)	561
15	ME	0 (0.0%)	0 (0.0%)	1 (0.8%)	128
16	MS	6 (1.9%)	4 (1.3%)	5 (1.6%)	320
17	NC	12 (2.2%)	11 (2.0%)	5 (0.9%)	538
18	ND	0 (0.0%)	0 (0.0%)	0 (0.0%)	69
19	NE	4 (2.5%)	5 (3.2%)	6 (3.8%)	157
20	NM	4 (1.6%)	4 (1.6%)	3 (1.2%)	245
21	NH	0 (0.0%)	0 (0.0%)	0 (0.0%)	99
22	NV	0 (0.0%)	2 (1.0%)	8 (4.1%)	196

No.	State	Number of Agreement State Events (ratio of reportable events to total number of licensees)			No. of Agreement State Licensees* As of 5/12/1998
		1997	1998	1999	
23	NY	7 (0.%%)	6 (0.4%)	4 (0.3%)	1360
24	OH	OH became an Agreement State in August, 1999		2 (0.3%)	704*
25	OK	OK became an Agreement State in September, 2000			
26	OR	10 (3.7%)	4 (1.5%)	9 (3.4%)	268
27	RI	1 (1.2%)	2 (2.4%)	0 (0.0%)	84
28	SC	2 (0.6%)	3 (1.0%)	1 (0.3%)	330
29	TN	13 (2.3%)	25 (4.4%)	16 (2.8%)	563
30	TX	61 (4.0%)	57 (3.7%)	24 (1.6%)	1540
31	UT	1 (0.5%)	2 (0.9%)	2 (0.9%)	223
32	WA	5 (1.2%)	14 (3.4%)	6 (1.5%)	412
Total Agreement State Events		255 (1.7%)	284 (1.9%)	232 (1.6%)	Total Agreement State Licensees: 14,947

* Licensee information is contained in the 1998 edition of the NRC Information Digest.

The number of NRC reportable events in 1998 and 1999 is listed in Table 3-5. Note that reportable events involving fuel cycle facilities and non-power reactor events are excluded. The average reporting rate for NRC reportable events is about 3.6%.

Table 3-5 Number of NRC Reportable Events from 1997 to 1999.

NRC Regions	Number of NRC Events (ratio of reportable events to total number of licensees		No. of NRC licensees (6/1/98)
	1998	1999	
RI	44 (2.4%)	42 (2.3%)	1839
RII	25 (2.8%)	31 (3.5%)	883
RIII	95 (4.3%)	76 (3.4%)	2214
RIV	56 (6.0%)	50 (5.4%)	927
Total	220 (3.8%)	199 (3.4%)	5863

Note: Events involving fuel cycle facilities and non-power reactor events are excluded.

The Working Group examined a total of 14 IMPEP reports, including both NRC Region and Agreement State IMPEP reviews that were conducted between January 1998 and April 2000. Most of the reports document that the reviewers selected and examined approximately 10 to 15 reportable events and checked if those events were reported to the NMED system. Overall, the IMPEP reviewers found that most of the reportable events were appropriately reported to the NMED system; however several IMPEP reports (including both Agreement States and NRC Regions) identified some reportable events that should have been, but were not, reported to the NMED system. The Working Group believes it would be useful to monitor NMED reporting rates to identify regulatory programs with unusually low reporting rates. Follow-up actions may be needed to ensure that technical problems or other issues are not hindering the submittal of reports to NMED.

Recommendation 3-4: Staff should develop a statistical chart by NRC Regions and Agreement States, based on types of events and number of licensees in each event category, and periodically brief management on these. In the briefing, staff needs to provide analyses regarding the high or low event reporting rates in some Agreement States and NRC Regions, and make recommendations for improvements. **(Low priority)**

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Task 4a Improve Understanding of Stakeholders

4.1 Basis for Event Reporting

Questionnaire responses indicate that 11 of the 21 Agreement States are not aware of the goals and measures in the NRC Strategic Plan. There is a need to inform stakeholders about the performance goals, measures, and results.

Recommendation 4-1: The SA-300, "Handbook on Nuclear Material Event Reporting in the Agreement States," should be revised to include a description of the performance goal and measures. Additionally, the basis for determining that reporting is an issue of compatibility should be clearly explained. **(High priority)**

An example of the information that could be included in the SA-300 handbook follows:

> NRC's Strategic Plan (NUREG-1614, Vol. 2, Part 1) contains a Nuclear Materials Safety Performance Goal of preventing radiation-related deaths and illness, promoting the common defense and security, and protecting the environment in the use of source, byproduct, and special nuclear material. These are national goal; therefore, events reported by NRC licensees, as well as Agreement State licensees, are included in the performance measures. The measures include loss of control of licensed material, accidental criticality, overexposures (those exceeding limits), medical events, malevolent use, releases to the environment (those exceeding limits), and loss of control which results in vulnerability of radiological sabotage, theft, diversion, or unauthorized enrichment of special nuclear material.
>
> Also, Section 208 of the Energy Reorganization Act of 1974 requires NRC to provide to Congress, on an annual basis, information regarding significant events that meet the Abnormal Occurrence (AO) criteria. NRC may determine that events other than AOs may be of interest to Congress and the public, and should be included in an appendix to the AO report as "Other Events of Interest."
>
> Both the performance goals and the annual report to Congress are based on the National Materials Program. In order to meet these objectives, NRC needs complete and timely reports from its Regions, as well as from Agreement States. NRC has a program in place to receive reports of events, and a procedure to evaluate those events for generic trends and potential consequences. In order to meet the objectives, NRC relies on the receipt of timely and complete event information. Because of its need to evaluate the *National* Materials Program, NRC has determined that reporting of events by Agreement States to NRC is mandatory and is an issue of compatibility.

4.2 Event Assessment and Review

Questionnaire responses indicate that of the 21 Agreement States that responded, 19 are aware of NRC's program to review events for generic issues. In addition, 18 of the 21 that responded perform reviews of their incidents for generic issues. It is reasonable to conclude that States appreciate the value of such reviews. No improvements are required in this area.

4.3 Reporting Events

NRC and Agreement State licensees are required to report events to their regulatory agency. Reporting requirements appear in the applicable regulations. Significant events include those which require reporting to the regulatory agency immediately (4 to 24 hours) following the event.

SA-300 specifies that Agreement States should inform NRC of significant events within 24 hours of receiving event reports from State licensees. Thirteen Agreement State responses to the questionnaire indicate that they have difficulty providing information within these time frames for reasons including: States don't have enough information within 24 hours; the information cannot be verified within 24 hours; they are busy responding to an incident; or they are short-staffed.

The Working Group debated whether the problem was the need to inform NRC within 24 hours, or NRC's policy for writing preliminary notification (PN) reports. A simple "head's up" report from an Agreement State should impose a small burden, but lengthy questioning from NRC staff preparing a PN can impose a significant burden on the State. The group identified three options:

Option 1. Agreement States report all significant events to NRC within 24 hours and NRC revises its procedure for preparing PNs.

Pros: Limits NRC questioning of State. NRC learns of State events quickly and prompt release of information may improve public confidence. SA-300 procedure is consistent with licensee reporting requirements.

Cons: NRC will find it difficult to accept reports without asking follow-up questions. If accepted, PNs for Agreement State events may contain less information than other PNs. This would increase the need for PN supplements. Initial reports often contain errors and release of inaccurate information may reduce public confidence.

Option 2: Agreement States report all significant events to NRC within 48 hours and NRC uses the existing procedure for preparing PNs.

Pros: States allowed more time to respond. More opportunity to confirm initial reports and correct errors. Release of more accurate information may improve public confidence. No change to PN procedure.

Cons: SA-300 procedure inconsistent with licensee reporting requirements. Delaying release of information may reduce public confidence.

Option 3: Agreement States report significant events to NRC within 48 hours, unless there is an immediate safety issue (e.g., stolen radiography source, etc.). Events with an immediate safety issue would be reported to NRC within 24 hours. NRC uses existing procedure for preparing PNs.

Pros: States allowed to exercise judgement. Better use of NRC and State resources. No change to PN procedure. No delay in NRC notification and release of events with an immediate safety issue.

Cons: SA-300 somewhat inconsistent with licensee reporting requirements. Notification and release of information on less significant events still delayed.

Recommendation 4-2: The time frame in which States are expected to report significant events to NRC should be re-evaluated. The group recommends Option 3. See a related issue in Recommendation 5-4. **(High priority)**

4.4 Assessment of Events

The Working Group's opinion on how events should be assessed is outlined in Table 4-1, and discussed below. Figures 4-1 and 4-2 display the event review processes in NRC and the Agreement States.

4.4.1 Significance to Affected Licensee and Public

Initial assessment of events should be performed by the lead inspection office. The method of assessment, and timing, will vary based on the specific circumstances. Immediate action, such as emergency response and assistance, may occur for situations where immediate health and safety issues are identified. In other situations, reactive inspections/investigations may be performed. Yet in other situations, the licensee may simply be instructed to submit a detailed written report which includes findings and corrective actions, etc. In the latter situation, the event should be reviewed during the next routine inspection. The significance to the licensee and public is that the situation is mitigated, and specific deficiencies in the licensee's radiation safety program are corrected. The regulatory agency's performance in response to incidents should be reviewed during the next IMPEP review.

4.4.2 Significance to Other Licensees

Event information reported to NRC should be evaluated for generic issues and/or trends within 60 days by NMSS. An event or series of event types may result in the issuance of guidance or regulations for the purpose of preventing the occurrence of similar events by other licensees, thereby protecting health and safety. Guidance and feedback to licensees should be provided through generic communications and NMED Quarterly Reports. Evaluation results should be shared among NRC and Agreement State staff.

Recommendation 4-3: State efforts should be utilized whenever possible, with NMSS serving as lead. As communications between NRC and Agreement States improve (see Recommendation 4-6), NMSS should identify State efforts that can be utilized during future assessments. **(Medium priority)**

Table 4-1 Event Assessment Outline.

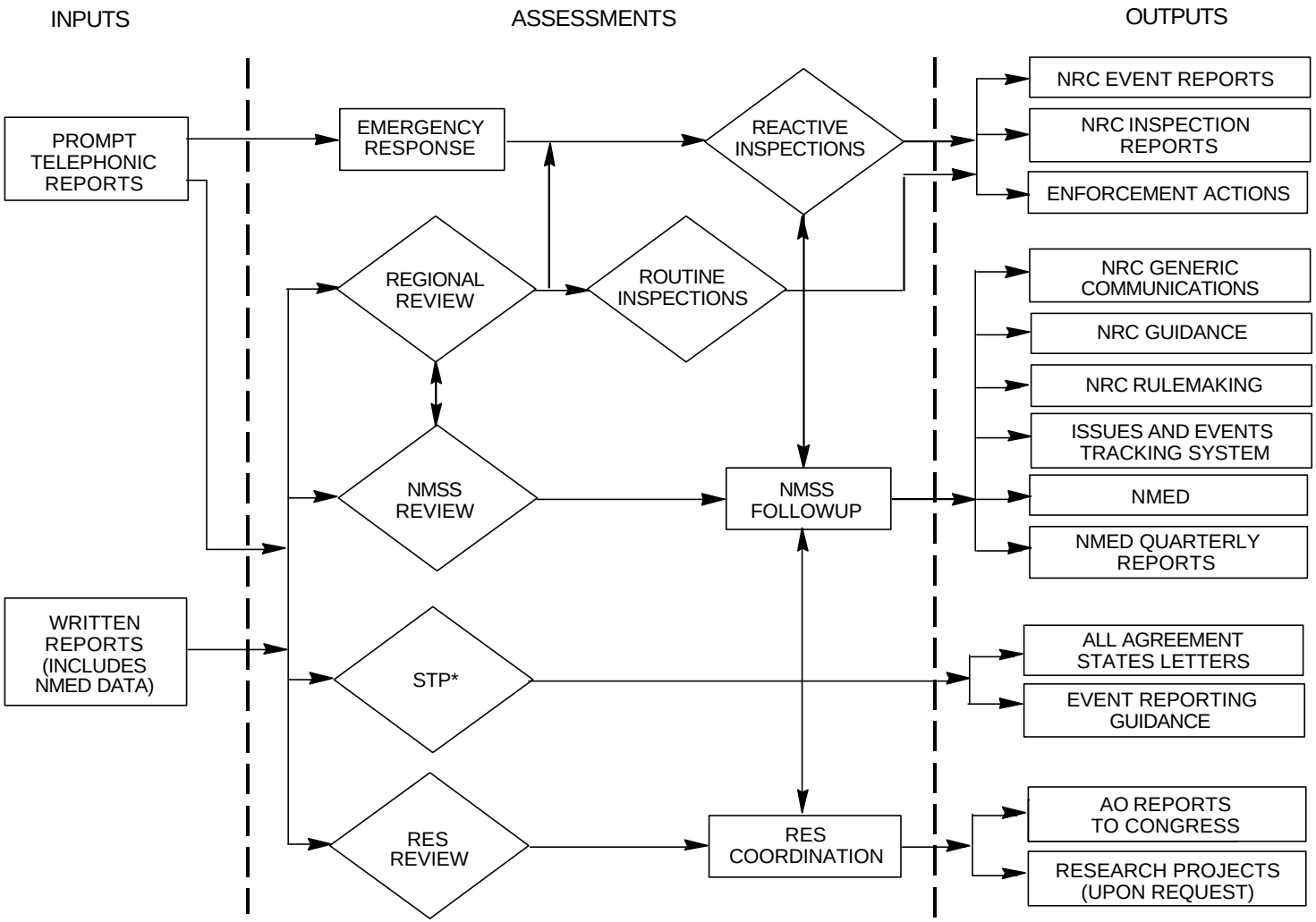
Assess each event for significance to...	Assess for what?	Who should assess?	Assess when?	Share results how?
Affected licensee and public	Immediate health and safety issues Immediate response actions	Lead inspection office	Immediately after event is reported	NRC and Agreement State event reports
Other licensees	Generic safety issues (including regulations and guidance) Generic response actions	NRC/NMSS should serve as lead coordinator. State efforts should be utilized whenever possible.	60 days after initial report	For licensees: Generic communication and/or NMED Quarterly Report For regulators: monthly e-mail (RadRap)
Regulators	Adequacy of regulations and/or guidance (not addressed above) Staffing Performance assessment	IMPEP review teams	During IMPEP review (every 4 years)	IMPEP report

4.4.3 Significance to Regulators

Regulatory agencies are responsible for ensuring that their programs for materials licensing and inspection are adequate to protect health and safety of the public. The event reporting, evaluation, and lessons learned process aid the regulator in achieving this goal. Output of the evaluation processes provides the regulators with a performance measure to indicate the adequacy of the national materials program in meeting the goal of protecting health and safety. Revised regulations and/or guidance should be issued in situations where the generic assessments have identified weaknesses in the manner in which materials are used or regulated.

The IMPEP process should be used to evaluate the adequacy of a regulatory agency's program and performance in response, mitigation, and reporting of events. The IMPEP team is comprised of NRC and Agreement State individuals. Agencies receive written IMPEP reports, and summaries of the reviews and periodic meetings. Some Working Group members raised the issue that the four-year period between full IMPEP reviews is too long to allow for an evaluation of a regulatory agency's efforts, when NRC has a concern about the adequacy of an agency's

response to, and evaluation of, an event. The group discussed this issue and concluded that for significant events, the communication level between NRC and the regulatory agency during the course of the event will allow NRC sufficient opportunity to raise any issues regarding the response efforts.



* support NMSS in assessment of Agreement State events.

Figure 4-1 NRC Materials Event Review Information Flow.

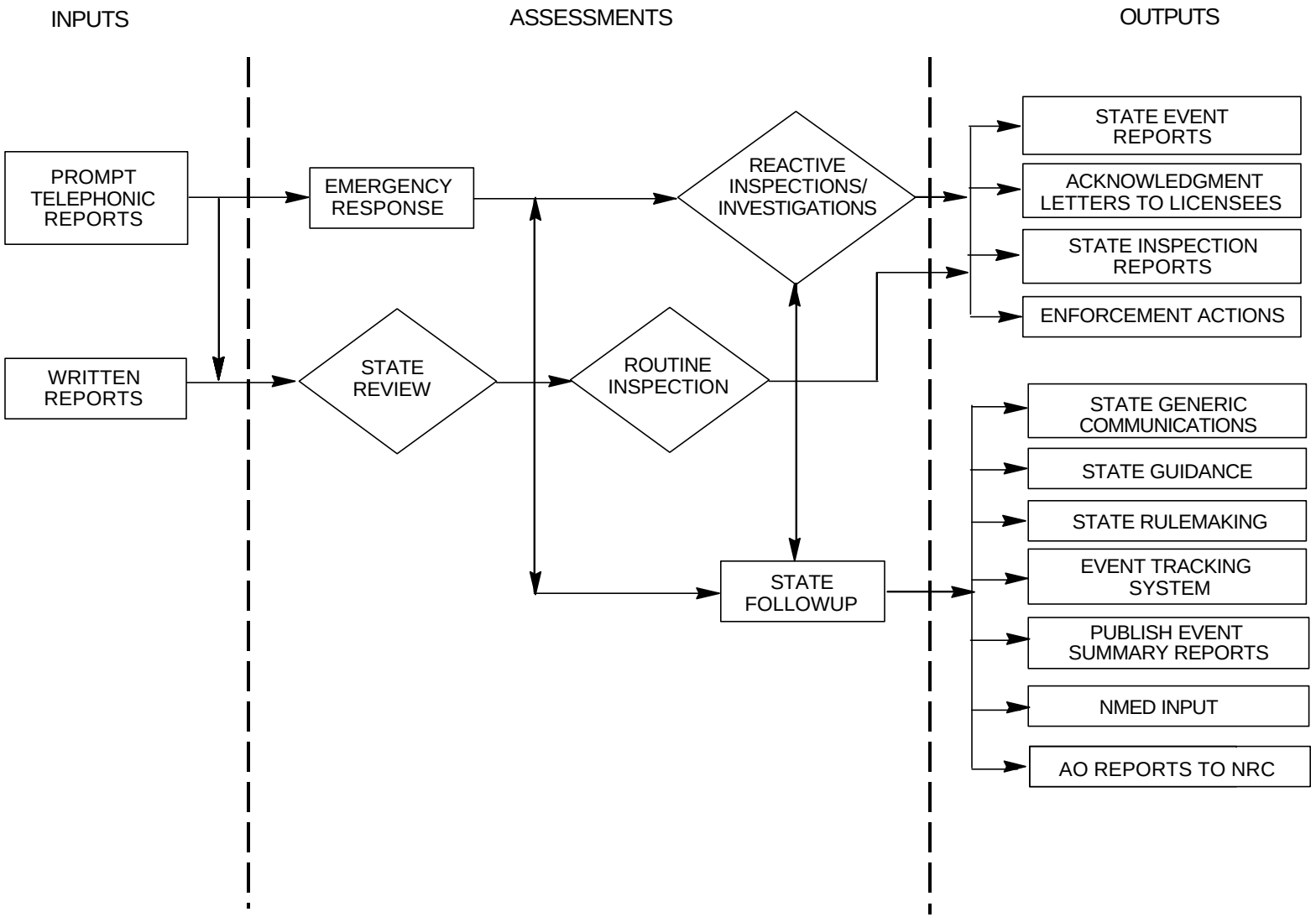


Figure 4-2 Agreement State Materials Event Review Information Flow.

Task 4b NMSS Generic Issues Program – Opportunities for Improvement

4.5 Introduction

The purpose of this program is to implement NRC Management Directive 8.5, Operational Safety Data Review. NMSS is responsible for the licensing, inspection, and environmental reviews of all non-reactor activities regulated by the Nuclear Regulatory Commission, including safeguards technical reviews. These activities involve thousands of licensees conducting a wide range of operations. The following technical divisions are responsible for reviewing operational data related to the specified program areas:

IMNS: The Division of Industrial and Medical Nuclear Safety (IMNS) is responsible for industrial, commercial, medical, and academic activities. This includes sealed source and device evaluations.

FCSS: The Division of Fuel Cycle Safety and Safeguards (FCSS) is responsible for fuel cycle activities associated with uranium recovery (as of June 2000), uranium conversion, and reactor fuel fabrication. This includes safeguards and threat assessment activities related to special nuclear material.

DWM: The Division of Waste Management (DWM) is responsible for decommissioning, low-level waste, and high-level waste repository activities.

SFPO: The Spent Fuel Project Office (SFPO) is responsible for spent fuel storage activities, and domestic and international transportation of radioactive materials.

4.6 Inputs

The operational data reviewed to identify potential generic issues consists mostly of event reports. Figure 4-3, “NMSS Generic Issues Program,” shows how these reports feed into the process. The following reports are primary sources of operational data. These reports are generated by NRC after an event is reported or discovered.

- Event Notifications (ENs) – Documentation of reports to the NRC Operations Center. The NRC Operations Center may be contacted by telephone, facsimile, or e-mail. The reports come from NRC licensees, Agreement States, and members of the public.

- Preliminary Notifications (PNs) – NRC reports (usually from the Regions) providing upper management with early notice of significant events.

- Morning Reports (MRs) – Daily NRC reports (usually from the Regions) containing: 1) descriptions of events not already reported in an EN or PN; 2) additional information related to earlier reports, and 3) other items of interest.

In addition to these reports, a number of written reports also provide input. The written reports are typically issued anywhere from a few days to a few months after an event is discovered. These written reports include the following:

- NRC licensee reports – These written reports often provide investigation results for events previously reported by telephone. They may also be the initial report of events that do not require a telephone report (e.g., a leaking sealed source, the loss of a small quantity of material, etc.).

- NRC Inspection Reports – These written reports document findings from reactive inspections focusing on a significant event, and routine inspections that review events reported since the last inspection.

- Agreement State Reports – Agreement States provide records to the Nuclear Material Events Database (NMED) of events reported to them by their licensees and other parties. Records are usually provided once per month.

- Other information (news reports, etc.)

4.7 Process

4.7.1 Daily Screening and Regional Calls

The Division of Industrial and Medical Nuclear Safety (IMNS) has the lead responsibility for coordinating the Generic Issues Program for NMSS. Each morning, an IMNS Regional Coordinator (RC) reviews new event reports received since the last work day and enters them into the Issues and Events Tracking System (IETS). The RC participates in a morning call with each Region to discuss new event reports and obtain any additional information the Regions may have concerning previously-reported events. Information on new and pending enforcement actions is also exchanged. Direct communication works well because information can be questioned and clarified before it is distributed.

After the morning calls are complete, the RC determines whether there is information involving operations or facilities outside of IMNS division program areas. If so, this information is forwarded to the appropriate technical division for action. The RC conducts a daily briefing for the IMNS Division Director.

Regional Coordinator (RC) duties for event reports is a full-time job, and RC duties for enforcement actions is a full-time job. It is difficult for one person to cover all RC functions, but that is how IMNS operated for several years. These duties have recently been assigned to two different individuals. We believe this is a much better distribution of responsibilities.

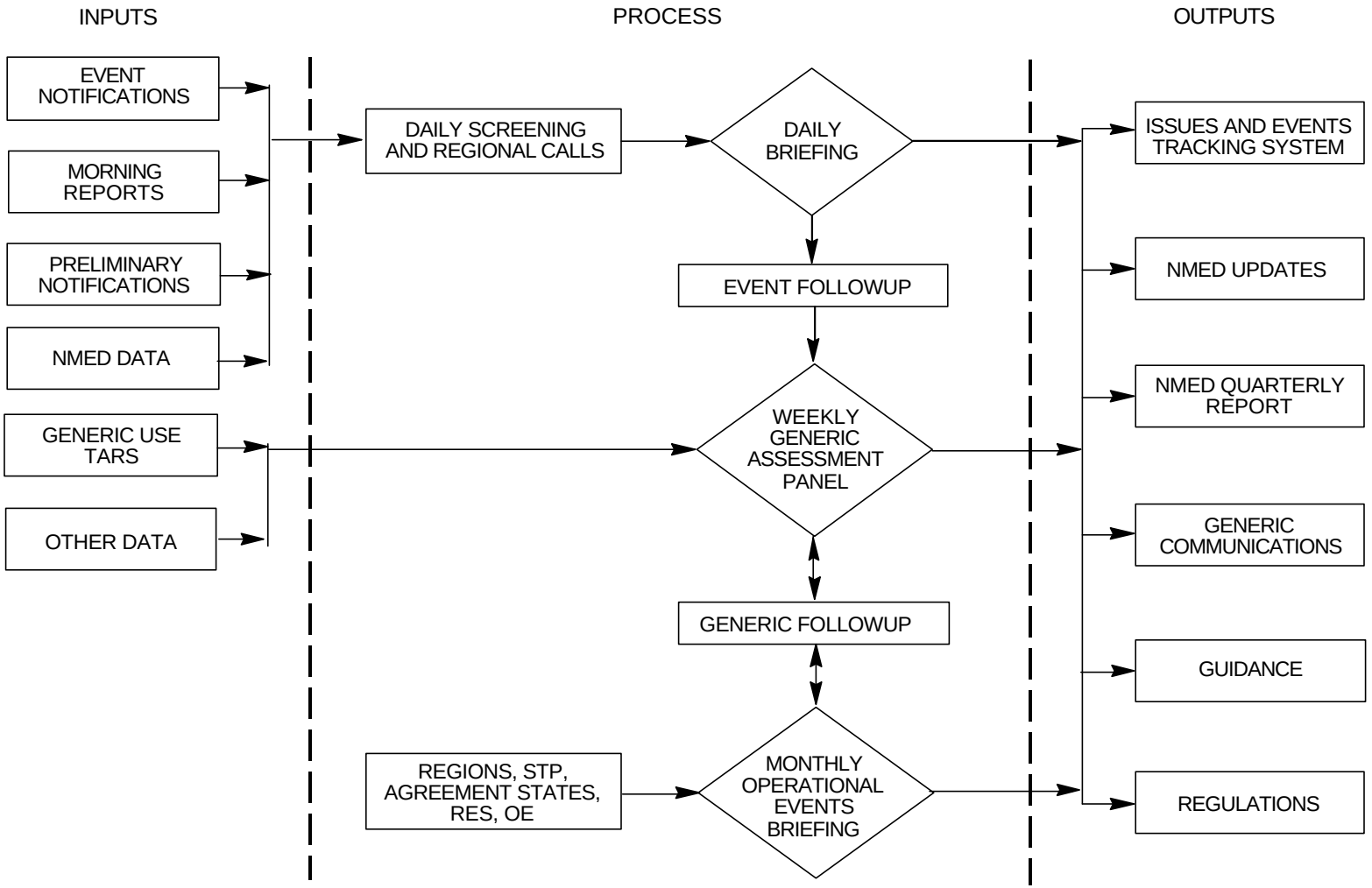


Figure 4-3 NMSS Generic Issues Program.

4.7.2 Event Follow-up

If the daily screening generates questions concerning immediate follow-up actions or other issues requiring immediate coordination, the RC will contact the appropriate individuals and obtain additional information. This may involve coordination with other Headquarters offices, Regions, Agreement States, licensees, or other parties associated with the issue. For events of interest to upper management, the RC prepares an event summary of the latest information for the NMSS Director's use during the Friday staff meeting with the Executive Director of Operations. These summaries are updated if significant new information becomes available.

Opportunities for Improvement: The event summaries are an effective way to keep upper management informed of significant or sensitive events. The working Group identified no specific recommendations for improvement in this area.

4.7.3 Weekly Assessment of Generic Issues

Each week, the IMNS Generic Assessment Panel (GAP) reviews industrial and medical events to identify generic issues and determine if a generic follow-up action is required. The panel consists of the IMNS Deputy Division Director and the two IMNS Branch Chiefs. Events related to other program areas are referred to the appropriate technical division for assessment. Representatives from the other technical divisions may attend and close insignificant events related to their program areas, but detailed reviews are performed outside of this meeting.

Opportunities for Improvement: The IMNS Deputy Division Director and the IMNS Branch Chiefs are often absent from GAP meetings. It is common for panel meetings to be conducted with one or two Section Leaders.

Recommendation 4-4: Revise the procedures to reflect current practice. Assign responsibility for management review of events to Chief of the Materials Safety and Inspection Branch (MSIB). Other managers can continue to participate as their schedules permit. **(Low priority)**

Although most reports are closed, a few events are left open each week because the initial event reports often don't contain enough information to conclude whether a generic follow-up action is needed. It can take several weeks to receive written reports containing investigation results. This has created a long list of pending items that is difficult to manage. In addition, inspectors have complained that responding to requests for additional information makes it difficult to complete their investigations.

Recommendation 4-5: Stop reviewing event reports for generic issues a few days after they are reported. Review event reports for generic issues *60 days* after the initial report date. The daily calls and briefings conducted by the IMNS Regional Coordinator are sufficient to identify and follow-up on immediate safety issues. Waiting 60 days will allow investigation reports to be completed and the assessment of generic issues will be more effective after investigation results are known. We believe this would improve the efficiency of the process because requests for additional information would be minimized. **(Medium priority)**

There is a general concern that Agreement States and NRC Regional Offices receive little feedback in return for significant resources invested in documenting event reports. The Working Group believes that assessments performed by NMSS are often filed away without distribution to State and Regional staff.

Recommendation 4-6: NMSS should develop mechanisms to improve feedback including distribution of assessment results to State and Regional staff. Although the NMED Quarterly Report could be used to distribute assessment results, we believe a monthly e-mail to Regional and Agreement State counterparts over the RadRap system would be a better feedback mechanism. It would be more timely and it would provide a mechanism for discussion and information exchange. The NMED Quarterly Report could be used to distribute information to licensees after all internal stakeholders have had a chance to review and comment on the e-mail reports. **(High priority)**

4.7.4 Generic Follow-up

Generic follow-up actions typically include requests for more information to assess specific events, searches for similar events in NMED, and preparation of generic communications. Most generic communications are information notices or articles for the NMSS Licensee Newsletter (issued quarterly). Occasionally, a bulletin, generic letter, or regulatory issue summary is also prepared. If the assessment identifies weaknesses in licensing or inspection guidance or NRC regulations, staff may be tasked with preparing new guidance or initiating a rulemaking action.

Opportunities for Improvement: The Working Group identified no specific recommendations for improvement in this area.

4.7.5 Monthly Operational Events Briefing

Each month, the NMSS Office Director is briefed on the investigation and follow-up of significant operational events. Staff from NMSS, STP, each Regional Office, RES, AEOD, OE, OIG, OIP, and OCA are invited to participate in the briefing. STP coordinates Agreement State staff participation in the briefings. A telephone bridge is provided for Regional and State staff.

Opportunities for Improvement: Concerns have been raised recently about comments at these briefings that appeared to question the adequacy/competence of Agreement State response actions. The Working Group believes these briefings provide a good forum for discussing issues and exchanging information among NRC and Agreement State staff. However, previously unidentified concerns about the performance of NRC Regions or Agreement States should be discussed directly with those offices. Regional and Agreement State staff should be able to participate in these briefings without fear of being embarrassed in front of a large group.

Recommendation 4-7: NMSS should establish guidelines concerning appropriate methods to raise concerns about the adequacy of event response actions outside of this forum. **(Medium priority)**

4.8 Outputs

4.8.1 Issues and Events Tracking System

The Issues and Events Tracking System (IETS) is a computer system used by NMSS to document the assessment of generic issues and track generic follow-up actions. This includes the results of daily briefings, weekly assessments, and monthly briefings. The RC enters new events into IETS and records the results of daily briefings and initial follow-up actions. The assessment of each event for generic issues is performed by the lead NMSS division. The results of these assessments and the status of generic follow-up actions are provided to the GAP coordinator for entry into IETS.

Opportunities for Improvement: Recommendations concerning IETS are provided under Task 5.

4.8.2 Nuclear Materials Events Database (NMED)

IMNS staff manages a contract with Idaho National Engineering and Environmental Laboratory (INEEL) to review material events reported to NRC by NRC licensees, Agreement States, and the public. INEEL categorizes the events and enters the data in the Nuclear Material Events Database (NMED). In the NMED system, a single record is established for each event. An initial event report is often followed by additional reports describing investigation results and corrective actions. INEEL uses the information in these reports to update the NMED record for the event.

Opportunities for Improvement: Recommendations concerning NMED are provided under Tasks 3 and 5.

4.8.3 NMED Quarterly Report

The NMED Quarterly Report provides a summary of event data in NMED during an 18-month period. For each event category, the total number of events in the last six calendar quarters is charted to show general data trends. Information concerning event causes and the activities associated with the events is also provided. Copies of the NMED Quarterly Report are available on the Internet at http://nmed.inel.gov/nmed.

Opportunities for Improvement: NMSS recently began issuing this report and only a few issues are available. A few responses to the questionnaire indicated that they were unfamiliar with this report. Several comments on the questionnaire noted that the first issues were not published in a timely manner. The Regions have not found the report useful, but 60% of Agreement State responses found it useful.

Recommendation 4-8: NMSS should make a greater effort to announce issues of the NMED Quarterly Report when they are available. In addition, the status of each event-related performance measure from the NRC Strategic Plan should be incorporated into the report. NMSS should consider obtaining input from Agreement States when draft reports are being prepared. **(Medium priority)**

Staff from the NMSS Division of Fuel Cycle Safety and Safeguards noted that the NMED Quarterly Report does not include events involving fuel cycle facilities due to "the significant difference in operation of these facilities when compared to the operation of other facilities that are licensed by NRC and Agreement States to use by-product, source, and special nuclear material." A separate trending analysis/evaluation for fuel cycle facility events was suggested.

Recommendation 4-9: The NMED Project Manager should work with fuel cycle staff to develop a section in the NMED Quarterly Report addressing fuel cycle events. **(Low priority)**

4.8.4 Generic Communications

Generic communications are used to provide information on recently-identified safety issues, but typically do not require any specific action or written response. They allow licensees to consider actions to avoid problems that have been experienced by other licensees. Occasionally, generic communications are used to address significant generic issues that may involve new staff positions previously unpublished. They may request licensees to take specific actions to address a safety issue and require a response to NRC concerning the requested actions. The procedures for these documents are provided in Inspection Manual Chapter 0730, "Generic Communications Regarding Materials and Fuel Cycle Issues." If a generic communication states a new staff position or requests new licensee commitments, NMSS informs the Commission before (if practicable) or immediately after the communication is issued.

Opportunities for Improvement: Responses to the questionnaire found NRC Information Notices very useful. The NMSS Licensee Newsletter was found useful, but not timely.

Recommendation 4-10: NMSS should improve the timeliness of the NMSS Licensee Newsletter. **(High priority)**

4.8.5 Regulatory Guidance

NMSS has lead responsibility for maintaining licensing and inspection guidance for materials programs. When the review of operational data indicates a weakness in existing guidance or a need for new guidance, appropriate technical staff are tasked with preparing new guidance.

Opportunities for Improvement: Working Group recommendations for guidance are addressed under Task 2.

4.8.6 Regulations

NMSS has lead responsibility for maintaining regulations for materials programs. When the review of operational data indicates a weakness in existing regulations or a need for new regulations, appropriate technical staff are tasked with a rulemaking effort.

Opportunities for Improvement: The Working Group recommendations for rulemaking are addressed under Tasks 1, 2 and 3.

Task 5 Software Systems Review

5.1 Introduction

The event reporting and assessment processes across NRC offices and Agreement States are tracked through the use of various computer databases and programs. Software systems are used to generate and transmit initial event reports and notifications. A system is then used to archive these data for the purposes of trend analyses, lessons learned, and operational event history. Finally, another system is used to track the various follow-up actions surrounding an event/incident.

In this task, the Working Group examined the use of software systems that support the event reporting and assessment processes. The group reviewed the various software systems used to create event reports, archive event data, and track follow-up actions in the various Agreement States and NRC offices. Recommendations on how to make these software systems more comprehensive, easier to use, or reduce duplication of effort are included. In addition, four specific issues that were presented in the charter are also addressed.

5.2 Input Reports – Event Notification Software

5.2.1 Event Notifications (ENs)

The Headquarters Operations Center (HOC) at NRC is a part of the Incident Response Operations (IRO) and is required to receive and assess any event notification, and notify senior NRC staff and other State/Federal agencies of significant events. The notifications are received by telephone, fax, or e-mail. Once received, the notifications are recorded in the Headquarters Operations Officer Database (HOODB), and assigned a unique EN number. The database contains in excess of 37,000 records and covers event notification information dating back to February 1985.

HOODB is a Sybase database with an MS Access 97 user interface. The database is hosted on a primary NT server running Sybase Adaptive server 11.9.2. This information is replicated to a secondary NT server using Sybase Replication server 11.5.1. Both of these servers are located in the Headquarters Operations Officer (HOO) area of the HOC in Two White Flint North (TWFN). Additionally, a backup server for use when evacuation of TWFN is required, is located in One White Flint North (OWFN). A third backup server is scheduled to be installed in Region IV. That server will be a DELL PowerEdge 2400. The primary and secondary servers in TWFN are DELL PowerEdge 2300 systems. The server located in OWFN is a Compaq Proliant 800. All servers use NT Server 4.0 (SP 6a) and Sybase 11.9.2. The primary database, HOODB, is copied to each of the backup servers daily.

Clients access the data base using three DELL Precision Workstation 210 systems. They use NT Workstation 4.0 (SP 6a) with Sybase client 11.1.1. The user interface to HOODB is MS Access 97.

The HOO network is independent of NRC's LAN. For security purposes, the HOO LAN is only accessible at dedicated work stations. If the backup servers are used to input event information, manual procedures are used to update the primary server.

Event data are exported to the Office of Nuclear Reactor Regulation (NRR) each morning by 0645. The data exported are in ASCII text and DB III format. NRR is the office responsible for distributing the information further. They use procedures to automatically update NRC servers on work days. These servers are not updated on weekends or holidays. Information is released both internally and externally (NRC web site) at approximately 0700 hours each business day. There are a couple of exceptions to this practice which are:

1. Reports received from other Federal agencies and notifications from International Agencies and countries having bilateral agreements with the U.S.

   In the past, NRC received complaints from other Federal agencies, especially the Environmental Protection Agency (EPA), for reports placed on the NRC web site describing incidents where NRC was not the lead Federal agency (LFA). Notifications from International Agencies and countries having bilateral agreements with the U.S. are currently being addressed in the "One Voice" initiative. This initiative was created as a result of the lessons learned from the Y2K Federal response and coordination effort, and the Federal response to the criticality event in Tokai-Mura, Japan. The goal of this initiative is to enhance communication and coordination among the member agencies of the Federal Radiological Preparedness Coordinating Committee (FRPCC) so that the Federal government speaks in a consistent manner following peacetime radiological events or emergencies under the Federal Radiological Emergency Response Plan (FRERP), especially those events or emergencies occurring in foreign countries.

2. Notifications from private citizens and State/Local Agencies reporting incidents involving radioactive material.

   In the case of Agreement States, the NRC report was construed as a "press release" and an infringement upon the State's regulatory authority.

3. Reports involving law enforcement investigations.

   The information assessment team (IAT) has requested that we suppress all reports which involve ongoing law enforcement investigations. These reports are not entered into the HOC Event Database (HOODB) until the HOC is notified that the investigation is completed. This is determined by the IAT, as part of their assessment.

Event information is sent monthly to INEEL, where it is used to update the NMED system.

With the increased use of e-mail, IRO has raised a concern regarding event reports from Agreement State agencies. The NRC Operation Center has experienced disruptions in its e-mail service. IRO is concerned that if Agreement States use e-mail to notify the Operations Center of significant events while e-mail service is disrupted, messages will not be received until the service is restored. Procedures should be established to ensure that event reports transmitted by e-mail are received by the NRC Operations Center in a timely manner. The Working Group suggests that the NRC Operations Center acknowledge e-mail reports as soon as they are received. Agreement States should establish procedures to follow-up by telephone if e-mail reports are not acknowledged within a reasonably short time (i.e., one hour).

Recommendation 5-1: IRO and STP should establish procedures for confirming e-mail reports of significant events from Agreement States to the NRC Operations Center. **(High priority)**

5.2.2 Preliminary Notifications (PNs) and Morning Reports (MRs)

Morning reports (MRs) and preliminary notifications (PNs) usually address events previously reported and documented in the EN system. They do not duplicate a previously issued report, but address the same event if additional information perceived to have significance is provided. These documents were initially only prepared within the Regional Offices, but now they are also prepared at NRC Headquarters. Most PNs and MRs, however, are still prepared by the Regional Offices. Both types of documents are prepared using separate software developed in the early 1990s as replacements for out-going systems. (The MRs had been generated in WYLBUR, a system at NIH; PNs had been custom prepared using an IBM 5520 text process system.) The two new generation systems were designed to facilitate preparation, improve consistency and accuracy of information, and utilize a then "new" concept and capability for electronic transmission of text. Neither of these generation programs has been upgraded to today's new technology. A copy of the generation software is located in each of the Regional Offices, since connectivity concerns originally precluded using the Headquarters version. Installation has been adjusted to satisfy Regional needs; however, this complicates maintenance and troubleshooting. Connectivity concerns also led to Headquarters staff extracting the generated reports from each Regional database system and placing the information into the composite NRC database located on OWFN-3.

The processing of MRs and PNs today differs in that for MRs, an ASCII datafile, which contains multiple formatted MRs, is transmitted to update the HQ database and provide viewing/review of multiple reports. The HQ database contains all the MR information in a Clipper file with data contained in individual *.dbf and *.dbt files. The PN files used to update the HQ database and provide a report for viewing/review also have the *.dbf and *.dbt form, but they usually contain information for a single document.

A ZIP copy of the ASCII reports containing the MRs is used by others to update the NRC web site. ZIP files have been found to provide a more reliable product than transferring an ASCII file. ASCII files are used to give a viewable format and appearance. WordPerfect (WP) files have not normally been used because the appearance (spacing of displayed text) is dependent upon the font type and size associated with the individual user. Also, different versions of the same text processing application may cause changes in appearance.

Recommendation 5-2: The software used for the PN and MR systems is under the control of NRR. The Working Group believes the processes used in the existing systems are outdated and inefficient. However, it is our understanding that NRR has no plans to upgrade these systems. We believe that maintenance and troubleshooting will become more difficult as these systems age. We recommend that NMSS and the Regions work with NRR to develop a plan to upgrade the PN and MR systems. **(Low priority)**

5.2.3 State Reports

Agreement States were not polled as to what software or method they use for the initial notification of events. They were, however, polled as to how they track the various follow-up actions associated with a reported event. These software systems will be discussed in Section 5.4 of this report.

5.3 Data Archive

5.3.1 National Databases – Nuclear Materials Events Database (NMED)

The principal database for archiving NRC and Agreement State materials events is NMED. The management of NMED was transferred to NMSS in 1998. This database references reports, but does not maintain them as separate records. NMED consolidates the information contained in various event reports (ENs, MRs, and PNs), inspection reports, licensee incident reports, and enforcement actions concerning an event into a single, accurate record.

The NMED database currently exists in three forms: 1) on the Internet; 2) for specific Agreement states; and 3) NRC local. The Internet version of NMED is accessible to all employees of NRC and State Radiation Control Programs. In order to access this version, the user must access it from an IP address that identifies the individual as an NRC or State Radiation Control Program employee. This version of the database includes simple drop-down and point-and-click menus that allow users to more easily search NMED for licensee event reports conforming to specific criteria. It does not allow the user to establish queries, and limits the user to the pre-established search and sort criteria found on the web site. The Internet address for NMED is http://nmed.inel.gov/nmed. Through the web site, users can download an executable Access 2.0 version of the database; therefore, they do not need to have Access 2.0 installed on their computers. This downloaded version only contains the raw data, and not the graphical user interface.

The other two forms of the database are both currently written in Microsoft Access 2.0. Each Agreement State has a version of the database which contains event data solely from its own State. The NRC local version is also written in Access 2.0 and contains data from all the Agreement States and from NRC licensee events. Currently, only NRC staff have access to the NRC local version.

Planned Upgrades

In order to make the use of NMED more effective and efficient, various upgrades are planned. By mid-2001, the Internet version and Agreement State local versions of the database will be upgraded. The Internet version will be modified to provide the functionality that currently exists in the Access versions of the database. More search and query options will be incorporated to allow for more customizable use of the database. The Agreement State local versions will also be upgraded to Access 2000 by mid-2001. This version will allow the Agreement State personnel to send new NMED event records directly to the contractor from Access, as opposed to e-mailing and attaching a file with the event information. Furthermore, this upgrade will allow the Agreement State users to hyperlink to the national database from their local versions.

In addition to the major upgrades planned for the system, INEEL has a list of approximately 70 suggestions from various NMED stakeholders on how to improve the NMED software. The Working Group recommends implementing those changes that would make the software more effective and efficient. These changes should center around making the entry of data into the system more consistent and easier. Changes that reduce the ambiguity of the data along with increasing the accuracy of the data should also be the focus of planned upgrades.

The Working Group identified the following change to the software that would help increase its effectiveness and efficiency:

> **Recommendation 5-3:** Add hyperlinks to reference documents. Often times staff refer to reference documents in order to extract event details that are not captured by the NMED record. In order to increase the efficiency of NMED, the Working Group recommends that the ADAMS accession number for all reference documents used to generate the NMED record be included as part of the event records and, if possible, create a hyperlink to ADAMS that automatically retrieves the reference documents. In order to achieve this unilaterally, all Agreement State documents will need to be input into ADAMS so that they can be assigned an accession number. **(Low priority)**

5.3.2 International Database – Radiation Events Database (RADEV)

Purpose

The Radiation Events Database (RADEV) is a product of the International Atomic Energy Agency's (IAEA) Action Plan on the Safety of Radiation Sources and Security of Radioactive Materials. Specifically, the action plan states that the IAEA will fully develop and maintain an international database on unusual radiation events and make it available to member States. The purpose of the database is to provide a mechanism for sharing information on lessons learned from particular events. The database is being developed to archive incidents/accidents involving medical and industrial uses of nuclear materials. For example, data to be input into RADEV include event reports involving personal overexposures, unintended radiation doses to patients, lost/stolen radioactive material, releases of material, and problems with devices that contain radioactive material. RADEV will serve as a repository of event records involving such incidents and will also serve as a tool for feeding back safety related information to the international regulatory community and other international entities. The way this is envisioned to operate is that completed event reports will be sent in to IAEA by member States, and in some cases professional organizations, for input into RADEV. Reports will be developed by RADEV from the data sent in by member States and distributed to the international regulatory community. The target audience includes regulatory authorities, users of radiation sources or radioactive materials, manufacturers, and suppliers of radiation sources and equipment containing such sources.

Structure and Data Collection

Two database designs were reviewed to help define the structure of the database: 1) NRC's Nuclear Materials Event Database (NMED); and 2) the National Radiological Protection Board's (NRPB) Ionizing Radiation Incidents Database (IRID). Both databases contain records of incidents/accidents involving the use of radioactive material in industrial and medical activities. RADEV is similar in design and scope to NMED and IRID. Just like NMED, the RADEV database is written in Microsoft Access.

In order to encourage and facilitate participation in the database, member States will be given an operational version of the database with a unique identifying reference number. These will be national RADEV databases. The central, "worldwide," RADEV database will be a collection of all nationally supplied data, and will be operated by IAEA. It is expected that the main suppliers of the data will be regulatory and government authorities from member States, national and international professional organizations, and international organizations. A small amount of additional data may come directly from equipment suppliers or users (e.g., hospitals).

The preferred method of collecting data at the Agency will be in an electronic format generated by the user's version of RADEV (national) and sent to the Agency via diskette, CD, e-mail, or other appropriate means. The second method by which information will be sent to the Agency is on paper questionnaires. It is realized that while IAEA could request regular updates, it is more likely that the data will be sent to the Agency when it is complete (that is, the event assessment has been completed and documented). A reporting threshold has not been defined, but it is anticipated that the threshold will be employed in data collection.

Status

RADEV is in the preliminary stages of development. The data elements, data structure, and software design have been finalized, along with the format of the data collection form. According to the milestone schedule, the development of the RADEV software is expected to be completed by mid-2001, when RADEV testing with a user group is anticipated to begin. Full implementation of RADEV is then expected for early 2002.

> ***Note:*** Recommendations on NRC's participation in this database are included in Section 5.5 of this report.

5.4 Action Tracking Systems

5.4.1 NRC Headquarters

Issue and Events Tracking System (IETS)

When NMSS established its Generic Issues Program in 1996, it used ETS to track its follow-up actions. However, ETS was developed for reactor events and didn't meet all NMSS needs. In 1998, the Issues and Events Tracking System (IETS) was developed and NMSS stopped using the NRR system, after information in the NMSS records in ETS had been copied to IETS.

IETS is a Microsoft Access 2000 database that tracks numerous NMSS assessments and follow-up actions to event reports. This database complements the NMED system, which documents events and related reports, but does not track the assignment and closure of follow-up actions by NRC staff. IETS also tracks the status of NRC follow-up actions for licensee bankruptcy declarations and enforcement actions (e.g., demands for information, confirmatory action letters, etc.). IETS attaches to databases containing ENs, PNs, MRs, and NMED reports and populates many of its fields by importing data directly from these report databases. Importing data from these databases minimizes the amount of information that must be entered manually. The database files for the ENs, PNs, and MRs are located on the OWFN-3 server at NRC Headquarters.

IETS attaches to the following databases to obtain the necessary event information:

- OWFN-3\edit\pn\PNTODAY.DBF for preliminary notifications
- OWFN-3\edit\en\ENTODAY.DBF for event notifications
- OWFN-3\edit\mr\MRTODAY.DBF morning reports
- S:\NMED_AC\ADHOC.MDB for NMED data, where it copies data from the "Master_Table_Event" table and views data from the "Report" table. This information is used to inform management of Agreement State events recently entered into NMED and for event analysis.

The IETS system exists in two separate database files, one containing just the data tables and the other containing the graphical user interface which consists of the various forms, reports, queries, and macros used to manipulate the data. The data tables and the master program are located on an internal NRC drive, SSSS on TWNWFS4\NRC (i.e., the H:/ drive). Access to this drive is limited to select NMSS staff in order to maintain the integrity of the data. Individual users copy the graphical user interface database from the SSSS (H:/) drive onto their local drives. The individual users' local version of the graphical user interface link to the data tables on the H:/ drive, thus allowing users to input, update, and view the shared data without modifying the master graphical user interface located on the shared drive (H:/ drive). A graphical representation of the information flow is presented in Figure 5-1.

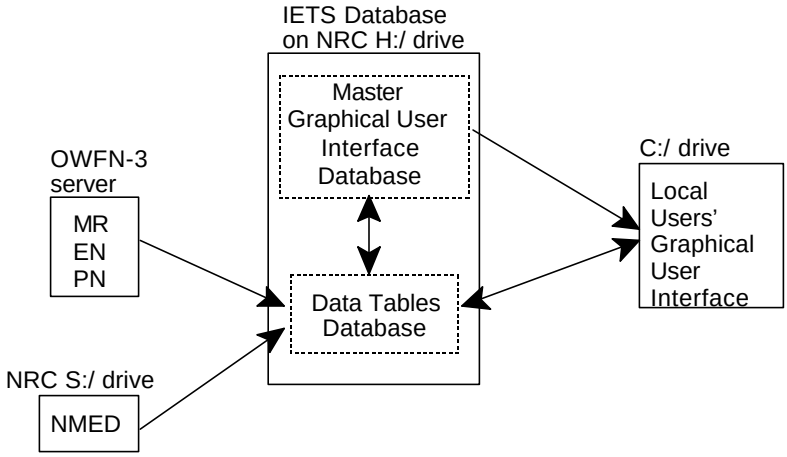


Figure 5-1 Electronic Data Flow of the IETS Database.

5.4.2 NRC Regional Offices

The NRC Regional Offices were asked to provide details of how they track follow-up actions related to events. All four Regions indicated that they use some form of paper tracking system. One Region indicated that a note to file is maintained by the supervisor or placed in the licensee's docket file to ensure that event follow-up actions are taken immediately or during the next inspection. A different Region indicated that they rely on the inspector to review hard copy files, ADAMS, and NMED to identify any events that need to be investigated in more detail.

Note: Section 5.5 on specific software issues includes the Working Group's recommendation in this area.

5.4.3 Agreement States

Agreement State programs were also asked in the questionnaire to provide the methods they use to track follow-up actions and close out event reports. Approximately 75% of the States reported that they use paper tracking systems. These systems were described as ranging from a one page event summary to a paper tracking log of events. One State indicated that license files are used to track the follow-up of events. Thirty-three percent of the States use some form of computer tracking system through the use of programs such as Microsoft Excel and Access. Limited discussions with two Agreement States revealed that some States often combine the reporting and tracking of events into one system.

5.5 Specific Issues

The charter posed four direct questions regarding software systems:

Issue 1: Should NRC delay the posting of event reports on the external NRC web site? Recommendation No. 22 from the Incident Response Function Self- Assessment Report states that IRO and STP should work with OCIO to identify approaches to allow for a reasonable time delay (24 hours minimum) in posting 24-hour material event reports on the NRC external web site.

In response to concerns expressed by the Executive Committee of the Organization of Agreement States to the Commission in a public meeting on June 16, 1998, regarding the need for immediate Internet access to limited preliminary information on events before the State has had an opportunity to conduct an assessment, the Commission directed the staff to work out a solution.

Twenty of the twenty-one States that responded to the questionnaire feel that NRC should delay the posting of events onto the NRC web site for 24 hours or more. Specifically, four suggested holding releases for 24 hours, ten suggested 48 hours, several recommended 72 hours, and others recommended holding reports until information can be verified or determining holding time on a case-by-case basis.

Agreement States provide event information to NRC because the "Handbook on Nuclear Material Event Reporting in the Agreement States," and the STP procedure SA-300, "Reporting Material Events" requires them to report incidents to NRC in the same time frame that licensees reported the incident to the Agreement State. The initial report from the licensee is appropriately handled and responded to by the Agreement State. NRC has relinquished its authority to the States in these matters. As part of a State's response to these events, they determine which information they want to release to the public and when to release the information. The Agreement States have the lead in responding to these events and, as a result, NRC should honor the State's policy for releasing information to the public.

As a result of NRC not delaying the posting of events, it is believed that some Agreement States delay making their reports until more complete information is available or their investigation is complete. Delaying the posting of events to NRC's web site could improve the timeliness of reporting of events to NRC.

In response to the Commission, Incident Response Operations (IRO) has already started the process of changing their software to allow for the delay of the posting of Agreement State events to NRC's external web site. A complete description of the issues and software changes is provided in this section.

IRO requested that the Office of General Counsel (OGC) review the Agreement State request to determine whether there were any legal objections preventing NRC from delaying the posting of Agreement State reports on the NRC web site. OGC concluded that there was "no legal reason why the Agency cannot change its procedures and delay entering the data . . ." Delaying the release of event information is consistent with the delay that is experienced when other documents are declared Official Agency Records (OAR) in ADAMS, then released to the public three days later.

IRO has requested that their software contractor revise the existing software to allow for any requested delay in posting Agreement State reports to the NRC web site. This request includes the following items:

Agreement State Reports

Revise or extend program to allow delay in release to the Internet on a case-by-case basis. The default should be the current date. An additional field, unique to this screen, will be created that allows users to enter a "release date" in mm/dd/yr format. Also, if any date other than the default appears, the current Internet release would generate a null report stating "Event # xxxx is an Agreement State report which will be available on mm/dd/yr." The internal NRC release would contain the report and not be affected.

Modify HOO software to identify an Agreement State Report under the "Event Type."

All Reports

Revise or extend program to allow delay in release of both internal NRC and Internet security-related reports on a case-by-case basis. Occasionally, NRC receives security reports involving ongoing law enforcement investigations. At the request of either law enforcement or the IAT, NRC will suspend release until directed otherwise. However, it's important that NRC enter the information and have the ability to track the report in the HOO database. Both the internal NRC and Internet releases would generate a null report stating "Event # xxxx is the subject of an ongoing investigation and will be made available at a later date."

Recommendation 5-4: The Working Group recommends that NRC delay the posting of Agreement State event reports to the Internet on a case-by-case basis, as requested by the reporting Agreement State. However, as a compromise between NRC's desire to release information to the public immediately and the Agreement States' jurisdiction over these events and the information, the delay should not exceed 48 hours. This time limit is

consistent with the majority of the Agreement States' responses to this issue in the questionnaire. This recommendation should be considered concurrently with Recommendation 4-2, which would allow States 48 hours to report significant events to NRC. If Recommendation 4-2 is adopted, there may be no need for NRC to delay the release of Agreement State events. **(Low priority)**

Issue 2: Should NRC continue the use of separate event tracking systems in each office, or should one tracking system be used by NMSS and the Regions? This issue was raised during the 1999 Region IV IMPEP Review.

Recommendation 5-5: The Working Group recommends that separate tracking systems continue to be used in the Regions. One Region stated that follow-up to an event is scheduled by the Regional Office and several things are taken into consideration, such as the urgency to obtain additional information, the potential safety significance, the prioritization of resources, and available opportunities. For events that do not require immediate follow-up, the projected schedule may shift due to higher priority activities. The follow-up process should be left up to the Region because there is little benefit in tracking such details on an agency-wide basis. Tracking at higher levels requires feeding a system with many low safety-significant events and may have the unintended effect of placing a higher priority on them. **(Low priority)**

A Region recommended that an electronic tracking system be developed by Headquarters and provided to the Regions for local tracking of actions. The Working Group does not endorse this suggestion, but recommends that NMSS share the software and data format that is used to track events in Headquarters for the purpose of generic follow-up (i.e., IETS). The Regions would then have the tools and a starting point for an electronic system that they can customize to meet their specific needs.

Issue 3: Should NMED be made available to the public, and if so, what conditions and restrictions should be applied?

The Working Group weighed the advantages and disadvantages of allowing the public access to NMED. The advantages are that it will increase public confidence and will allow licensees and the public to view operational event data in one, condensed location (most, if not all of the information is already publically available, just not in this form). The public can then perform trend analyses of their own. Furthermore, the public/licensees can check for specific events at sites similar to their own to avoid similar events/problems.

The only real disadvantage that the Working Group could identify was that there are mistakes and incomplete records in NMED, which could lead to incorrect conclusions being drawn. Incorrect conclusions can even be drawn with completely correct and accurate data because of the different search methods and criteria that can be used. The Working Group believes that this disadvantage is not significant enough to withhold public access. As stated previously, the public already has access to this information. Furthermore, NMED data can be acquired through the Freedom of Information Act.

If NMED is made available to the public, a greater emphasis on complete and accurate data should be stressed. Consideration should be given to the impact that thousands of potential new users will have on the Internet servers that currently house the system.

Recommendation 5-6: The Working Group recommends allowing the public access to NMED. **(Medium priority)**

Issue 4: Should NRC participate in the IAEA materials event database, and what information would we share with IAEA?

Recommendation 5-7: The Working Group believes that NRC should participate in the RADEV database maintained by IAEA. The database was developed with assistance from NRC and modeled after NRC's own event archive database, NMED. Information could be shared very easily by utilizing and transmitting the existing data in NMED. The impact on staff would be minimal, provided that an appropriate threshold for events is developed. NRC representatives are involved with the IAEA team responsible for the implementation, along with the development of the database. The IAEA team will determine the threshold for events that should be included. In general, however, the Working Group recommends that only significant events be included, such as those that resulted in AO criteria being exceeded or the loss or release of large amounts of radioactivity. **(Medium priority)**

5.6 Conclusions and Additional Recommendations

The various software systems used in the notification, tracking, and archiving of materials event data share information with one another as depicted in Figure 5-2. The actual direct electronic transfer of data among the systems is depicted in Figure 5-3. A comparison of these two figures demonstrates that there are areas where software systems could interact directly with one another. From Figure 5-2 it can be seen that the NMED system either relies on data or transmits data to all of the other systems. NMED could be made more comprehensive by directly incorporating all of the other systems into itself. However, the Working Group does not recommend such consolidation because the various other systems have specific purposes other than event archiving (unlike NMED), as seen in Table 5-1. Furthermore, these systems are controlled, maintained, and utilized by many different organizations, both internal and external to NRC. The NMED system could, however, interact or link to electronic systems such as IETS, Regional software, or Agreement State software, to provide information on the status of generic follow-up activities. Such an interaction would assist the NMED contractor's efforts to accurately incorporate and update event information. Any new software interactions should be of minimal burden to NRC and Agreement State staff.

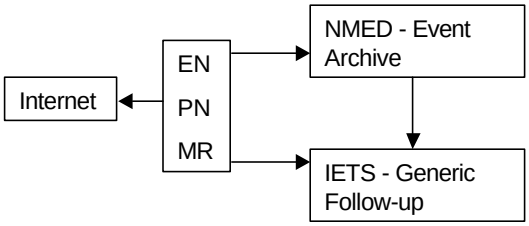


Figure 5-2 Information Flow among Systems used for Event Notification, Tracking, and Archiving.

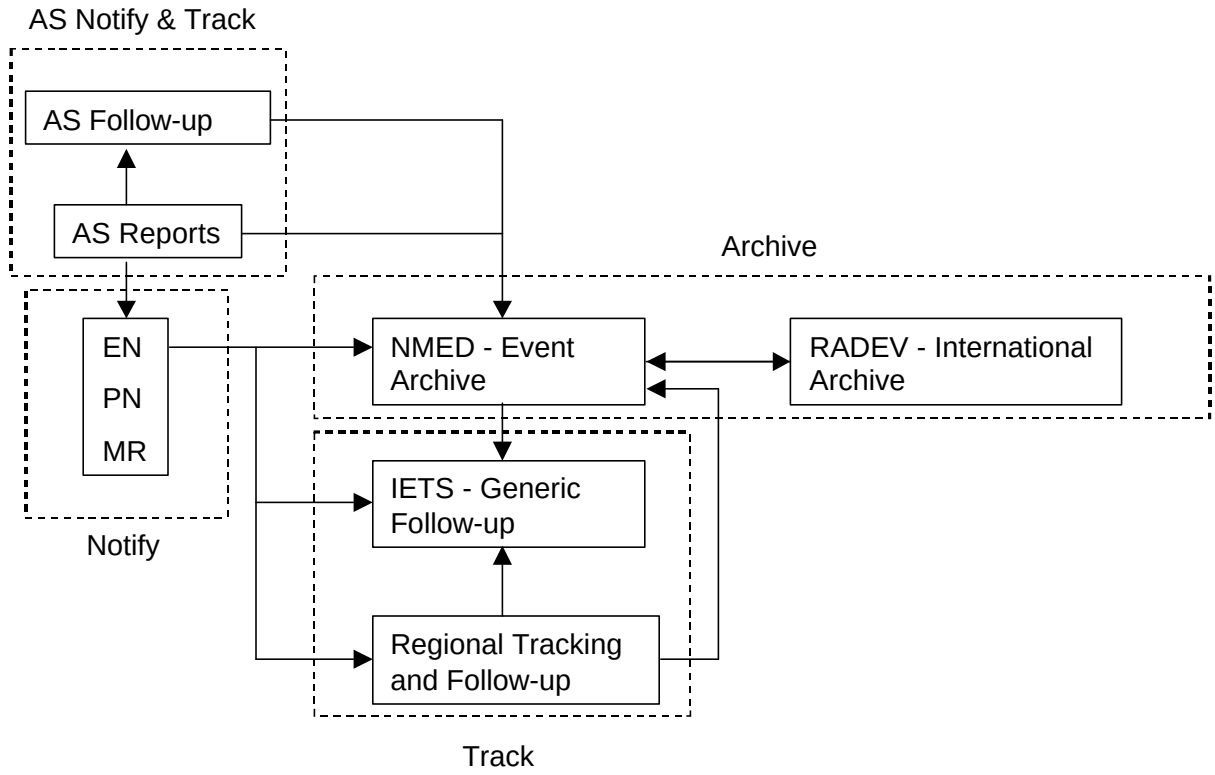


Figure 5-3 Electronic Data Flow among Software Systems used in Event Notification, Tracking, and Archiving.

Table 5-1 Characteristics and Interactions of Various Event Related Computer Systems.

	System	Purpose	Platform	Location	Input Access	View Access	Sends data to	Receives data from
Notification	Event Notifications (EN)	Initial Notification of events	Sybase with Access 97 interface	Stand-alone system in HOC	HOO	HOO	NRC EN database, web	Telephone, email, and fax reports
	Preliminary Reports (PN)	Update event	DOS based-custom	OWFN-3 NRC server	HQ and Regions	HQ and Regions	Web	Input by NRC staff
	Morning Reports (MR)	Update event	DOS based-custom	OWFN-3 NRC server	HQ and Regions	HQ and Regions	Web	Input by NRC staff
Archive	Nuclear Materials Events Database (NMED)	Archive and consolidate information on national events	Access 2.0 and Web	AS Local versions, NRC (INEEL), Web	NRC contractor	AS and NRC Staff	Web	EN, MR, PN, International, AS, Incident Reports
	Radiation Events Database (RADEV)	Archive lessons learned from significant international events	Access	IAEA (worldwide version) and Member States (local versions)	IAEA	Member States	No systems.	Member States NMED for US
Tracking	Issues and Events Tracking System (IETS)	Track Generic Follow-up/Assessment	Access 2000	NRC LAN	select NMSS/IMNS staff	select NMSS/IMNS staff	No systems	EN, MR, PN, NMED systems
	NRC Region event tracking	Track follow-up activities by licensee and Region	Paper	Regional Offices	Regions	Regions	No systems	Staff/Inspectors
	AS event tracking	Track follow-up activities by AS and licensee	Paper, MS Access, and Excel	Agreement States	AS Staff	AS Staff	No systems	Staff/Inspectors

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APPENDIX A – CHARTER FOR THE NRC / AGREEMENT STATE WORKING GROUP ON EVENT REPORTING

The NRC Office of Nuclear Material Safety and Safeguards (NMSS) has formed a Working Group to provide NRC management with recommendations for making the reporting and assessment of material events more effective, efficient and realistic. Agreement States and NRC Regions have raised concerns that the resources required to submit event reports and respond to requests for additional information are having a significant impact on their programs. In addition, NRC management has a growing perception that certain parts (i.e., briefings, etc.) of the materials event program are inefficient. Although NRC Headquarters conducted a self-assessment last year (see SECY-99-005, Self-Assessment of Operational Safety Data Review Processes), a review by the internal stakeholders is needed to address these concerns. The quality of materials event data is important because it is used to measure outcomes and determine if the performance measures in the NRC Strategic Plan (NUREG-1614) have been met. The Working Group is composed of representatives of State governments and NRC. The Working Group will coordinate its efforts with the Steering Committee for the National Materials Program Working Group and produce a draft and a final report with findings and recommendations for the Steering Committee and NRC management's consideration.

The Mission:

The mission is to develop recommendations for making the materials event program more effective, efficient and realistic. The program should implement the following philosophy:

To create a true partnership of the NRC and the States that will ensure protection of public health, safety, and the environment while:

- *optimizing resources of Federal, state, professional and industrial organizations;*
- *accounting for individual agency needs and abilities;*
- *promoting consensus on regulatory priorities;*
- *promoting consistent exchange of information; and*
- *harmonizing regulatory approaches while recognizing state and Federal needs for flexibility.*

To accomplish the mission, the Working Group will undertake the following tasks to prepare a report on the event information collected:

1. The Working Group will review the NRC Strategic Plan and identify what event information related to safety and environmental protection is needed to implement the plan and the activities derived from the Materials and Waste Safety portions of the Plan. Then, the group will review current NRC reporting requirements (and associated Agreement State compatibility assignments) and determine whether the information required supports implementation of the plan. The group will recommend how to resolve any discrepancies between the information needed and the information required by regulation. The review should consider the health and safety significance of the information. The group may use this as an opportunity to

recommend changes to the Strategic Plan. The purpose of this is to determine if NRC and the Agreement States are collecting the right safety information across the nation, and at the right level of detail.

2. The Working Group will examine guidance to licensees on event reporting. NMSS believes that existing event reporting guidance may contribute to the inconsistent quality of event reports submitted by licensees. The group is expected to consider whether the quality of event data could be improved by providing improved guidance to licensees. The Working Group should determine whether guidance is available, whether it is adequate, and whether licensees are aware of it. In addition, the group should note any changes that would require rulemaking.

To accomplish the mission, the Working Group will undertake the following additional tasks to prepare a report on the use of event information after it is received:

3. The group is expected to review the event information provided to NMED, and recommend how the quantity, quality, and consistency of event information can be improved. The information NMED receives on events has improved greatly in recent years and NRC staff believes that events with significant safety issues are being captured (i.e., overexposures, major misadministrations, loss of sealed sources). However, some less-significant events (i.e., loss of control of low levels of unsealed radioactive material) may be under-reported, and, if so, these less-significant events are not captured in NMED. In addition, important initial and follow up information is missing for some events. Several performance measures in the NRC Strategic Plan are based on NMED data, and missing or incomplete NMED data are a concern for NRC. The Working Group will assess whether necessary event information (as determined under Task 1) is under-reported, and, if needed, recommend improvements to the reporting process.

4. The Working Group will review the NMSS Generic Issues Program to identify opportunities to improve the program. NRC staff has noted that the program is labor intensive and is concerned that significant issues may be missed in the large volume of reports reviewed. NRC believes that the materials event assessment program has not been explained well and many stakeholders do not understand why materials event data are required, or how they are processed and analyzed. Internal stakeholders have expressed concerns about duplicative efforts, lack of coordination, and participation on the part of the Agreement States. The Generic Assessment Panel (GAP) has experienced problems where information has been lost or misdirected. The group should address the need to assess each event for 1) its significance for the affected licensee, 2) its significance for other licensees, and 3) its significance for regulators and the adequacy of their programs. The group is expected to review the program and offer recommendations in the following areas: 1) Describe what analyses should be conducted, who should conduct the analyses, when should the analyses be conducted, and how the results of the analyses should be utilized and shared nationally; and 2) identify where internal stakeholder communication and participation, and effectiveness and efficiency can be improved, especially with respect to analyzing events meeting the thresholds in the Strategic Plan, trends and precursor events.

5. The Working Group will examine the use of computer systems that support the event reporting and assessment process. NMSS believes there is room for improvement in the computer systems that support the materials event program. The group is expected to review the various systems used to create event reports, archive event data, and track follow-up actions. The group should recommend improvements that would make the systems more comprehensive, easier to use, or would reduce duplication of effort. In addition, the following specific issues should be addressed:

   a. Should NRC delay the posting of event reports on the external NRC web site? Recommendation no. 22 from the Incident Response Function Self Assessment Report states that IRO and STP should work with OCIO to identify approaches to allow for a reasonable time delay (24 hours minimum) in posting 24-hour material event reports on the NRC external web site.

   b. Should NRC continue the use of separate event tracking systems in each office, or should one tracking system be used by NMSS and the Regions? This issue was raised during the 1999 Region IV IMPEP Review.

   c. Should NMED be made available to the public, and if so, what conditions and restrictions should be applied?

   d. Should NRC and the Agreement States participate in the IAEA materials event database, and what information would we share with IAEA?

Schedule:

The Working Group will complete the project by March 2001.

- First Working Group meeting in Rockville, Maryland (April 4 - 5, 2000).
- Conference call status report (May 23, 2000)
- Second Working Group meeting in Austin, Texas (June 21-22, 2000)
- Conference call status report (July 26, 2000)
- Third Working Group meeting in Rockville, Maryland (September 6-7, 2000)
- Brief Steering Committee on actions to date and plans for future (late Sept. 2000).
- Working Group conference call to discuss Steering Committee comments and status of efforts (early October 2000)
- Prepare rough draft of report and provide to Steering Committee for review (Nov. 2000)
- Brief Steering Committee on draft report (early December 2000)

- Working Group conference call to discuss Steering Committee comments and actions to complete final report (mid December 2000).
- Prepare draft final report and provide to Steering Committee for final review (late January 2001)
- Brief Steering Committee on final report (February 2001)
- Make final changes and issue report (March 2001)

APPENDIX B – SUMMARY OF QUESTIONNAIRE RESPONSES FROM AGREEMENT STATES AND NRC REGIONS

SECTION I. QUESTIONS CONCERNING COLLECTION OF EVENT INFORMATION

NRC Management Directive 8.5, "Operational Safety Data Review," requires the Office of Nuclear Materials Safety and Safeguards (NMSS) to have a program for screening materials event reports and identifying generic issues. The NRC Office of State and Tribal Programs (STP) Procedure SA-200, "Compatibility Categories and Health and Safety Identification for NRC Regulations and Other Program Elements," makes reporting of Agreement State events to NRC a matter of compatibility. Implementing these requirements depends heavily on the quality of event reports submitted by licensees.

A. What guidance on event reporting do you provide licensees when a license is issued?

AS	NRC	
7	1	None
11	2	References to regulations
3	2	Copies of guidance documents
2	0	Other guidance, please specify:

Comments:

AS

1. *Contained in state rules same as USNRC*
2. *License Conditions*

NRC

1. *Copy of document in NUREG-1556 series .*
2. *Copies of regulations are provided when the license is issued, If requested, a licensee may be provided with a NUREG 1556 volume during the application phase. Some volumes of NUREG-1556 have references to reporting requirements.*
3. *Copies of regulations are provided, but no specific reference is made to reporting requirements.*
4. *Reference to applicable regulations and guidance is provided at time of license application, not when license is issued.*

I.B What guidance on event reporting do you provide licensees when an inspection is performed?

AS	NRC	
1	0	None
15	4	Verbal guidance
10	3	References to regulations
2	1	Copies of guidance documents
0	0	Other guidance, please specify:

Comments:

NRC

1. *References to regulations are part of verbal guidance.*
2. *Verbal guidance may be provided on initial inspection; however not consistently implemented.*
3. *Normally, guidance would be provided only if we suspect or know of a problem with an individual licensee.*

I.C Do you believe licensees are sufficiently aware of the reporting requirements applicable to their operations?

AS	NRC	
15	2	Yes
6	2	No

If not, what do you believe is needed to improve awareness?

AS

1. *We believe that awareness of the requirements can be improved by better use of the Agency's Internet site.*
2. *Some kind of guidance document.*
3. *This question is rather broadly stated. However I believe that licensees who utilize generally licensed devices are, for the most part, not sufficiently aware of the reporting requirements. This is also true of some infrequently inspected specific licensees such as small gauge users.*
4. *Larger licensees are aware but smaller licensees could use a reminder /guidance.*
5. *Improve clarity of regulation/requirement: write regulations/requirements so they can be understood. Reduce the number of event categories.*

NRC

1. *At the time of licensee's application and renewal, or after an incident, their awareness of reporting requirements is generally at its greatest. Since most licensees do not report events often, they may not follow all necessary requirements.*
2. *Add short summary of incidents, reporting criteria, and abnormal occurrence criteria to NUREG-1556 documents.*
3. *Develop an IN for distribution to all licensees with a perforated, tear-out sheet containing reporting requirements for posting or special filing.*
4. *In addition to licensing guidance that RSOs be trained in safety compliance, they should also be trained in regulatory compliance. This would include subjects such as event reporting, license amendments, change of ownership requirements, accuracy of information, and employee protection*.
5. *Web page can be used to increase awareness.*
6. *Some licensees are very aware of their reporting responsibilities, others aren't. Provide each licensee with a list of all reporting requirements specific to their type of license. The NUREG-1556 documents already have the list. All we to do is "cut" the list out and send it to each licensee as an easy reference. Would be best to select type font/size to put all information on one page if possible.*
7. *The answer depends on the type of license. Some are more knowledgeable than others. In general, the answer is yes.*

I.D Are you aware of any existing regulation or guidance that needs improvement to achieve more complete event reports from licensees?

AS	NRC	
3	2	Yes
18	2	No

If yes, please explain briefly:

Comments:

AS

1. *The misadministration rule needs to be expanded to include reporting requirements for events involving patient intervention. It is ridiculous to require events for other situations and leave this one out. There are a significant number of these and they result in additional patient exposure. A report of a misadministration by a licensee is not an admission of guilt.*
2. *The general licensee concept is flawed.*

NRC

1. *Not all NUREG-1556 series documents have a list of reporting requirements like that found in Volume 2 (radiography).*
2. *The NUREG-1556 volumes often contain references to reporting requirements, however the licensee may not have the publication or may not be familiar with it.*

I.E (For Agreement States only)

Procedure SA-300, "Reporting Materials Events" (February 20, 1998), specifies how and when Agreement State events should be reported to NRC. Program staff in each State should be implementing this procedure or a comparable procedure. Providing Agreement State event information to NRC is covered as part of the Integrated Materials Performance Evaluation Program (IMPEP) review.

I.E.1 Do you have comments or suggestions on the guidance in Procedure SA-300?

AS		NRC -Not Applicable
7	Yes	
14	No	

If yes, please explain briefly:

AS

1. *The present NMED reporting system is used to provide the 30 day reports. Under this system reports are submitted monthly. Therefore the 30 day criteria can not reasonable be met.*
2. *It should not be a part of the IMPEP review. There is no justification for making this a matter of compatibility.*
3. *More specific guidance is needed concerning "Other Events", of the Abnormal Occurrence Criteria.*
4. *State participation is voluntary, as there in nothing in the Atomic Energy Act or the agreement that requires states to adopt SA-300.*
5. *It is impractical to expect Programs to "report" incidents to NRC with the same promptness as the licensee reports to them. The Agency needs time to evaluate a report and develop a response. If the agency simply transmits the initial report to NRC them the licensee might as well be instructed to send a copy of any report directly to NRC. Incidentally, pre-1988 the agency has request to "share" information with NRC.*
6. *It is difficult to use NMED as the manual does not give enough info as to what is needed for all fields on the screens. We need to know what is needed and the criteria for each field.*
7. *Page 28, item IV For Medical Licensees is confusing with all the "ors" and "ands" – needs to be rewritten.*

I.E.2 (For Agreement States Only)

Procedure SA-300 specifies that the NRC Operations Center should be informed of significant events within 24 hours of receipt, and routine events should be provided to NRC within 30 days. It also states that follow-up and closeout reports should be provided to NRC within 30 days of receipt. Do you find it difficult to provide data to NRC within these time frames?

AS		NRC - Not Applicable
13	Yes	
7	No	

If yes, please describe the difficulty:

AS

1. *The present NMED reporting system is used to provide the 30 day reports. Under this system reports are submitted monthly. Therefore the 30 day criteria can not reasonable be met.*
2. *Sometimes licensees do not get us info within the time frames.*
3. *The primary difficulty is that there needs to be confirmation of the event before we are required to report it. There is no provision for that in the procedure.*
4. *Unless there is a need for assistance, there is no reason for us to take resources away from responding to an incident to notify NRC.*
5. *If the licensee's reports are incomplete, or there is a response delay in obtaining information from the licensee, additional time may be needed.*
6. *The 24 hour time frame should not include weekends or holidays.*
7. *Depending on the severity of the event, the length of the investigation, and the licensee's response to the investigation findings it can be difficult to provide some of the required information to NRC. Typically NRC requests information prior to the state being able to close the event.*
8. *In some cases, not enough information is known within 24 hours to provide appropriate and accurate information to be released to the public.*
9. *We are always short-staffed. Preparing a report for NRC within 24 hours is not possible if you are busy dealing with the incident. Also, information received initially is not always correct. If you go ahead and submit it to NRC, they will jump the gun and react to it.*
10. *The agency needs time to obtain a clearer picture of events and prepare its public information organization before it has to deal with requests for more information which it might not possess.*
11. *In some cases, we have limited staff available: when they are intimately involved in the ongoing investigation taking time to inform NRC is a distraction rather than a helpful experience.*
12. *The 24 hour report sometimes does not allow time for anything but preliminary information provided by the licensee, which may not be accurate, and is usually incomplete. The NRC Region will normally want to issue a PN notice, and presses for all the information needed to be able to do that. I realize that this process is designed to enable NRC to respond to any*

press inquiries received as a result of an incident. But how many inquires does NRC receive concerning agreement state reported incidents? I suspect that most inquires relate to NRC licensed facilities, such as nuclear power plants, who report directly to NRC.

13. *NRC is inconsistent on what it wants for closure, and the details to be submitted for follow-up reports. The state may consider the issue closed when the immediate health and safety issues have been addressed, prior to a determination of NOBS and fines.*

I.E.2 continued

What time frames would be better and why?

AS

1. *48 hours for significant events and 90-120 days for routine events. These time frame are easily achievable and should be sufficient from a safety point.*
2. *48 hours after receipt would seem acceptable for significant event notification; 90 days more appropriate for routine event reporting.*
3. *24 hours after confirming the event occurred.*
4. *60 days instead of 30 days for routine events would allow additional time for obtaining information for routine reports, follow-up and closeout reports.*
5. *About a 60-90 day reporting time would give the State the necessary time to complete the investigation, depending on the severity of the event.*
6. *72 hours. Seems reasonable in that in most cases it will be within 24 hours as it is now but for some cases the 24 hour limit may result in releasing information that generates interest and concern unnecessarily because the initial investigation has not been completed.*
7. *Three days. I have no problem with the 30 day requirement.*
8. *The agency needs time to obtain a clearer picture of events and prepare its public information organization before it has to deal with requests for more information which it might not possess.*
9. *48 hours would get us through the intense first day effort that can sap management as well as staff time.*
10. *Replace the 24 hour requirement with a 48 hour requirement. We would have time to get an inspector on the scene to verify the facts and make a more complete report. Routine event investigation can sometimes take longer than 30 days. Once the immediate health and safety concerns have been satisfied, the availability of investigators and the priorities of other inspection duties may result in the report taking longer than 30 days to be finished.*

I.E.3 (For Agreement States Only)

Are there restrictions or obstacles (e.g., laws, agency policies, etc.) that prevent you from providing complete or timely information to NRC consistent with the guidance in SA-300?

AS		NRC - Not Applicable
7	Yes	
14	No	

If yes, please explain briefly:

AS

1. *The present NMED reporting system is used to provide the 30 day reports. Under this system reports are submitted monthly. Therefore the 30 day criteria can not reasonable be met.*
2. *Local computer problems in the past but are being solved in the near future.*
3. *The difficulty has to do with competing priorities in a smaller program (such as our state's).*
4. *Law prevents us from disclosing the name of a facility reporting a misadministration or other events.*
5. *The concern that NRC will immediately place the information on the Internet before the State wishes to make all the details public, causes the State to delay reporting and causes the State to be selective in what information is reported to NRC. For example: Information the State may wish to verify from other sources before making that information public will be withheld from NRC until independently verified.*
6. *Public Disclosure Act protects information in on-going investigation; department policy on confidentiality protects release of certain information as well.*
7. *If another agency, such as the FBI, is investigating the event, the information provided to us may be restricted to avoid any potential compromise of their investigation.*

I.E.4 (For Agreement States Only)

How do you provide reports of significant events to the NRC Operations Center?

AS		NRC - Not Applicable
13	Telephone	
11	Facsimile	
6	E-mail	
1	Other, please explain briefly:	

AS
1. Mail

I.E.5 (For Agreement States Only)

How do you provide reports of routine events (including follow-up reports) to NRC for entry into the Nuclear Materials Events Database (NMED)?

AS		NRC - Not applicable
13	Submit records from NMED software to NMED contractor.	
6	E-mail other documents to NMED contractor.	
7	Hard copy submittal to NRC.	
1	Other, please explain briefly:	

AS
1. Facsimile

I.E.6 (For Agreement States Only)

For NRC events, copies of licensee reports, NRC inspection reports, and other documents are provided to the NMED contractor. Using these documents, the NMED contractor (not NRC staff) enters data into the NMED system. How would you prefer to handle data entry for Agreement State events?

AS	NRC - Not Applicable
6	Provide NMED contractor with copies of all event-related documents and have NMED contractor enter data on Agreement State events.
12	Use local NMED software to create and submit NMED records.
1	E-mail summary reports to NMED contractor using other software.
1	Other, please explain briefly:

AS

1. *We would like a clear online format to enter reports direct into the NMED web site. We have (several) field offices and each could enter their own reports we would meet the timeliness criteria.*
2. *(Our state) sends NMED to INEEL and if INEEL need additional information they typically e-mail (our state) who responds with the additional information by e-mail.*
3. *(responded "other") No preference at this time due to having no experience with NMED.*
4. *E-mail summary in text form is current method-initially begun because locally generated NMED report was not readable by NRC staff and others being sent the report in the belief it could be a quick "one stop" effort to cover various requirements. We would still like to get NMED to create "readable" reports that all could use.*

SECTION II. QUESTIONS CONCERNING ELECTRONIC DATA SYSTEMS

II.A Have current members of your staff attended a workshop on use of the NMED system?

AS	NRC	
16	4	Yes
4	0	No

Comments:

AS

1. *Yes but quite some time ago*
2. *Some have not had a chance to attend (new hires)*
3. *Only one individual at present and tat was several years ago.*
4. *It would be useful to offer an NRC training course - either on a routine basis (every 2 years) or upon reasonable request.*
5. *NA.*
6. *(responded "no") We do not use the NMED for this reason.*

II.B What version of NMED does your staff use? (Check both if applicable)

AS	NRC	
15	1	Local version
5	4	Internet version (http://204.134.132.3/nmed/)

Comments:

AS

1. *Access 2, April '97*

II.C What has been your experience with NMED? (check all that apply)

AS	NRC	
9	1	It is useful for reporting data.
6	0	It is more work than furnishing hard copies.
10	4	It is useful for searching data.
6	3	It is easy to use/user-friendly.
12	1	It is difficult to use/not user-friendly.
7	0	It is too prescriptive.
11	0	It is too labor intensive.
8	0	It has too many data fields.
2	1	It needs additional data fields, please specify briefly:

Comments:

AS

1. *Need to be able (to) enter state use code for RAM*
2. *When I was uncertain how to complete a closeout report for a recovered portable gauging device, I was uncertain how to attempt data entry in the NMED system, so an electronic written report was filed. Also, on other occasions when performing NMED system data entry I have struggled because the field choices did not appear to adequately represent the situation.*
3. *NA.*
4. *One respondent indicated that NMED is user friendly for search of NMED database, but difficult to use/not user-friendly for the input of NMED data).*

NRC

1. *Break out the four New York State agencies.*
2. *Need to upgrade NMED for those who electronically input their own data. The only version available is early version of Access that doesn't run well on current computers. We are aware of at least one State that keeps an older computer in-house for the sole purpose of running NMED and inputting data.*
3. *One State has indicated that licensee access to NMED would allow them to be more aware of incidents and equipment problems and subsequently, may prevent a repeat problem. The State provided an example where a misadministration occurred in an NRC Region that was repeated by an Agreement State licensee. The AS licensee was not aware that the same thing occurred elsewhere.*
4. *Many Regional staff don't use NMED often and consequently, find it cumbersome to use.*
5. *It is not accurate.*

II.D What method do you use to track follow-up actions and close out of event reports? (Provide example of data input form, if possible.)

AS	NRC	
15	3	Paper tracking system
8	1	Computer tracking system, please describe software:
1	1	Other, please explain briefly:

Comments:

AS

1. *EXCEL*
2. *EXCEL*
3. *$NMED updates*
4. *DataEase*
5. *Copy of paper tracking log provided with questionnaire response*
6. *Form attached (one page event summary)*
7. *Assess '97*
8. *Track thru license file*
9. *Access '97*
10. *Event reports are tacked on an Access data based program*

NRC

1. *A note to file is maintained by the supervisor or placed in the docket file to ensure that an inspection is scheduled or follow-up is conducted at the next inspection.*
2. *We rely on inspector to review hard copy files, ADAMS, and NMED to identify events requiring follow-up and documenting same in the report. All events are discussed at our morning meeting. Some events result in immediate telephone follow-up to obtain additional information.*

Please identify person that can provide more information about your tracking system:

Name: _____ Phone: _____

NOTE:

All AS respondents included a name and phone number, however one indicated the person is no longer with the state program.
All four NRC Regions included a name and phone number.

II.E NMED does not provide fields for identifying follow-up actions, lead offices, due dates, or closeout dates. Do you believe it would be useful to add tracking fields such as these to NMED?

AS	NRC	
8	3	Yes, a central tracking system in NMED would be useful.
12	1	No, follow-up actions should continue to be tracked separately.

Comments:

AS

1. *It would be help to know it was closed*

NOTE: One state did not provide a response to this question.

II.F (For NRC Regions Only)

Currently, each Region and NMSS track their follow-up actions internally with separate tracking systems. Should one tracking system be used for all NRC follow-up actions, or should each office continue to track their follow-up actions separately?

NRC	AS - Not Applicable
3	Develop a single, agency-wide tracking system.
1	Continue separate tracking systems in each NRC office.

Please explain why:

NRC

1. *Follow-up to an event is scheduled by the Regional Office and takes several things into consideration, such as the urgency to obtain additional information, the potential safety significance, the prioritization of resources, and available opportunities. For events that don't require immediate follow-up, the projected schedule may shift due to priorities. This process should be left up to the Region as there is no benefit in tracking such details on an agency-wide basis. Tracking at higher levels requires feeding a system with many low safety-significant events and may have the unintended effect of placing a higher priority on them.*
2. *An electronic tracking system developed by HQ and given to the Regions for local tracking of actions would be useful. This approach is a combination of the two alternatives provided in this question. NMED could also be modified to accomplish a similar function.*
3. *Consistency.*

SECTION III. QUESTIONS CONCERNING EVENT ASSESSMENT

III.A (For Agreement States)

Do you evaluate events in your jurisdiction to identify generic issues?

AS		NRC- Not Applicable
18	Yes	
2	No	

Comment:

AS

1. *Low number of events (was the comment by the state providing the negative response to this question.*
2. *Yes – For case by case determination if warning letters warranted for similar licensees; No – For formal evaluation of a collection of past events. (This response was not tabulated.)*

III.B Does the attached flow chart (Figure B-1 for NRC and Figure B-2 for Agreement States) accurately reflect the event review process for your office?

AS	NRC	
13	2	Yes
4	2	No

If no, please explain differences:

AS

1. *The arrow between the "reactive inspections/investigations" decision box and the "state follow-up" action box should be a two-way arrow.*
2. *Written reports require acknowledgment letters and possibly inspection and enforcement actions.*
3. *There is not always an acknowledgment letter, often it is an acknowledge phone call. The other items under "outputs" are all considered but the events may not justify them being taken.*
4. *"Reactive inspections/investigations" may also be initiated from the state review of the licensee's written report: therefore an arrow from "state review" to "reactive inspections" or a double headed arrow between "state follow-up" and "reactive inspections" is warranted. Also, the arrow from "prompt telephonic reports" to "written reports" is unnecessary and perhaps misleading in the sense that some written reports are not associated with events having prompt phone calls. Finally it is our understanding that the "diamond" shape represent a decision point and the rectangular boxes are tasks or activities: we believe "emergency response" should be in a diamond and the "reactive inspections/investigations" should be in the rectangular box.*

NOTES:

1. *One respondent did not receive the flow chart.*
2. *Two respondents indicated that they received an incomplete flow chart or could not read the charts.*

NRC

1. *Figure B-1 doesn't show Regional review, preliminary notification preparation, non-emergency reactive inspections, and Regional follow-up.*
2. *Figure B-1 doesn't reflect Region's immediate evaluation of the phone call or written report. The figure doesn't reflect NMSS Regional Coordinator's daily call with each Region. The figure doesn't reflect the event assessment – routine inspection follow-up flow path.*

III.C Are you aware that NRC Headquarters is screening all materials events (including Agreement State events) to identify generic issues?

AS	NRC	
19	4	Yes
2	0	No

Comments:

AS

1. That is the only reason any of us should participate!

III.D For significant events, NRC Headquarters may request additional information immediately. (For Agreement States, these questions may come from the Region State Agreements Officer.) For routine events, how long should NRC Headquarters wait (after initial report to NRC/State) before it requests additional information?

AS	NRC	
12	0	30 days
5	1	60 days
4	3	Other, please specify:

Comments:

AS

1. *We will respond to clarification questions whenever they are asked.*
2. *If NRC has a question regarding an event they should call/e-mail but there should not be a "required time frame."*
3. *Information should be shared when it is needed.*
4. *Any time (as soon a possible) following notification as long as all questions are captured in one transmittal (we don't need an endless trail of hit or miss questions or disjointed questions from several NRC offices).*

NRC

1. *No sooner than quarterly.*
2. *It depends on the information NRC needs. If it is understood that a written report is going to be sent in by the licensee and will include the information, HQ should wait 30 days. If the need is more urgent, commensurate with safety significance, HQ should make its need known as early as possible.*
3. *Usually the morning briefing between NMSS and the Regions identifies information that HQ thinks may be useful. However, should additional information be necessary for routine events, it would be best to wait for the licensee's written report which may provide additional information.*

III.E Have you received NRC Headquarters requests for additional information concerning event reports within the last 12 months?

AS	NRC	
14	4	Yes
7	0	No

If yes, approximately how many did you receive? _____

Comments – Number of requests for those who responded yes to this question:

AS
3-5
2 – not indicated
2
2
4
10
2
7
3-4
5
3
<5

NRC
6
25
Don't know
~10

III.F Do you believe NRC Headquarters information requests are reasonable?

AS	NRC	
13	2	Yes
6	2	No

If not, why not?

AS

1. *Requests were state/incident specific and did not have national/programmatic significance.*
2. *Some are reasonable, others push for information for closure before full evaluation has been completed.*
3. *Because they already had the information in their hands they were requesting.*
4. *Often, requests are made before information is developed. The information request is not unreasonable.*
5. *Based on the experience of one event, it seems that NRC requested too much information that was not available within the specified time period.*
6. *Most of the time.*

NRC

1. *Sometimes the questions asked by HQ reflects their lack of knowledge regarding what actually goes on during inspections and incident response.*
2. *Requests are usually reasonable, but sometimes it isn't evident what is driving the need for the information.*
3. *Most are Agreement State issues. Headquarters can call Agreement States as easily as we can.*

III.G Do you believe NRC Headquarters handles the information well?

AS	NRC	
9	2	Yes
8	1	No

If not, why not?

AS

1. *As far as we know the information is handled well however, we are not knowledgeable of NRC's internal processes.*
2. *One respondent did not provide a response to this question.*
3. *NRC needs better internal communications between the Regions and Headquarters. There have been redundant requests for information and several instances of gaps in information stemming from failure to share data.*
4. *Not sure.*
5. *We do not know enough about how NRC headquarters handles the information to give an informed answer. We do know that they are sometimes too quick to release it to the public.*
6. *Based on the experience of one event, it seems that too many individuals were trying to gather information for a report to NRC management: it seems that NRC staff did not communicate internally.*
7. *It is sometimes publicized too soon.*
8. *Sometimes the PN (Internet) hits the wire before we are ready with our own press notification.*
9. *Many times we will receive requests from other sections for information previously submitted (particularly on misadministration events).*

NRC

1. *NMED has lots of errors, and few people know how to use the system.*
2. *Don't know.*

III.H Have you used NMED to research/analyze event data?

AS	NRC	
11	4	Yes
10	0	No

If yes, have you found the information useful?

AS	NRC	
11	3	Yes
1	0	No

Please explain briefly:

AS

1. *We access NMED database to search for events in our State, other States, & NRC Regions. The information in the database has been helpful.*
2. *It has been used for root cause evaluations pursuant to review of similar incident sets.*
3. *We have researched loss of material events. Trying to make sure we do all possible to report correctly.*
4. *It is helpful to identify the Agreement States or NRC Regions which have had similar events.*
5. *Accessed and used the NMED system to verify whether the event reports sent by (our State) have been entered int the NMED database.*
6. *NA.*
7. *The data is not consistent covering NARM events.*

NRC

1. *NMED has lots of information, but it requires patience, experience and knowledge of how regulatory agencies and licensees conduct business to use. As indicated above, there are numerous errors in NMED.*
2. *Inspectors routinely review NMED as part of the inspection preparation process. The information is utilized routinely for IMPEP reviews, and as follow-up information on a given class of events or specific events. Specific searches may be done to obtain historical information on certain subjects to assess the safety significance of an issue.*
3. *Provided useful background information and event specific information on previous problems in a specific area.*
4. *Useful, but not always accurate.*

SECTION IV. QUESTIONS CONCERNING EVENT-RELATED PRODUCTS

IV.A How useful do you find the following NRC communications? (very useful, useful, not useful, unfamiliar with)

NRC Information Notices

AS	NRC	
12	4	very useful
6	0	useful
1	0	not useful
0	0	unfamiliar with

NMSS Licensee Newsletter

AS	NRC	
4	0	very useful
12	3	useful
2	1	not useful
1	0	unfamiliar with

Comments:

NRC
1. *Not Timely.*

NMED Quarterly Report

AS	NRC	
4	0	very useful
8	0	useful
4	3	not useful
3	1	unfamiliar with

Comments:

AS
1. *We have not seen this (NMED Quarterly) report.*
2. *Not received quarterly.*
3. *Just received the first quarterly report.*
4. *One response indicated that the NRC Information Notices are 1, 2 or 3 depending on the subject, therefore the response was not tabulated above.*

NRC
1. *Not Timely*

IV.B (For Agreement States)

Do you provide these NRC communications to State licensees?

AS	NRC - Not Applicable
1	Yes
3	No
15	Sometimes, please explain:

1. *Response states "incomplete question."*
2. *Only on rare occasions have we provided these reports to our licensees. We are considering posting them on our web page.*
3. *If relevant.*
4. *If they are applicable.*
5. *Copies of Information Notices and only as time permits.*
6. *Some information (notices) license contain information directly related to a group of licensees. We mail letters and copies of the notices to them.*
7. *Ones that apply to our licensees.*
8. *If applicable to (our state's) licensees, we may send an Information Notice.*
9. *No explanation given by one state for its "sometimes" response.*
10. *Sometimes the information is furnished in State format.*
11. *Whenever the subject/topic is applicable to the licensee's program.*
12. *If it applies to our licensees, we provide them. Sometimes they do not apply.*
13. *We have placed links in our web home page to NRC and other Federal and National Organization URLs.*
14. *If the info directly affects a licensee.*
15. *If information in the Notice is relevant to our licensees and of significant importance, we will forward the information.*
16. *We mail of incorporate the information into mass mailings to licensees when pertinent Information Notices come out.*
17. *It depends on the subject matter, volume and resources available.*

IV.C The Government Performance and Results Act of 1993 requires NRC to establish measurable performance goals, and to provide the U.S. Congress with annual reports of actual program performance. Are you aware that NMED data is used to measure the national performance of NRC/Agreement State programs in these reports?

AS	NRC	
10	4	Yes
11	0	No

Comments:

AS

1. *I thought this applies to Federal Agencies*.

IV.D The International Atomic Energy Agency (IAEA) is developing an international materials events database. What information on U.S. events do you believe we should share with IAEA?

AS	NRC	
0	0	None
2	2	Abnormal Occurrences only (25 rem exposures, etc.)
6	2	All events reportable within 24 hours
9	1	All events
4	1	Other, please explain:

Comments:

AS

1. *Let's give IAEA access to the NMED and let them make their own evaluations of what is important or not.*
2. *Events involving international commerce, i.e. scrap metal, equipment containing radioactive materials.*
3. *Include all NMED information (responded to "other").*
4. *Let IAEA decide (and let them extract it from NMED themselves!).*

NRC

1. *Not familiar with IAEA efforts.*

IV.E (For Agreement States)

NRC event reports are posted to its Internet site within 24 hours. This includes reports of significant Agreement State events provided to the NRC Operations Center. Some States have expressed concerns with this practice. Which of the following would you prefer?

AS	NRC - Not Applicable
1	Continue releasing all event reports immediately.
4	Hold Agreement State reports for 24 hours before release.
10	Hold Agreement State reports for 48 hours before release.
7	Other, please explain:

Comments:

AS

1. *To allow for further evaluation and investigation.*
2. *No response to this question.*
3. *In actuality the NRC event report is a press release. NRC should hold reports for 72 hours to allow more time for confirmation and accuracy of incident information.*
4. *No response given.*
5. *Some events, such as loss of microcurie quantities of short half live material are not worth reporting.*
6. *Hold until more complete info is available and is verified.*
7. *(State responded to both 48 hours and other.) Allow AS to specify that some information should not be made public until the site investigation is completed.*
8. *Hold until the AS authorizes release. Most of the time it will be within 24 hours but not always. Premature release of information can create unnecessary excitement and concern.*
9. *Hold reports for three days.*
10. *Evaluate each event on a case by case basis, with a recommendation from the state. As was pointed out earlier, much of the initial information in these reports comes form the licensee and has not been verified by this department. It is usually partially inaccurate and almost always incomplete.*

IV.F (For Agreement States)

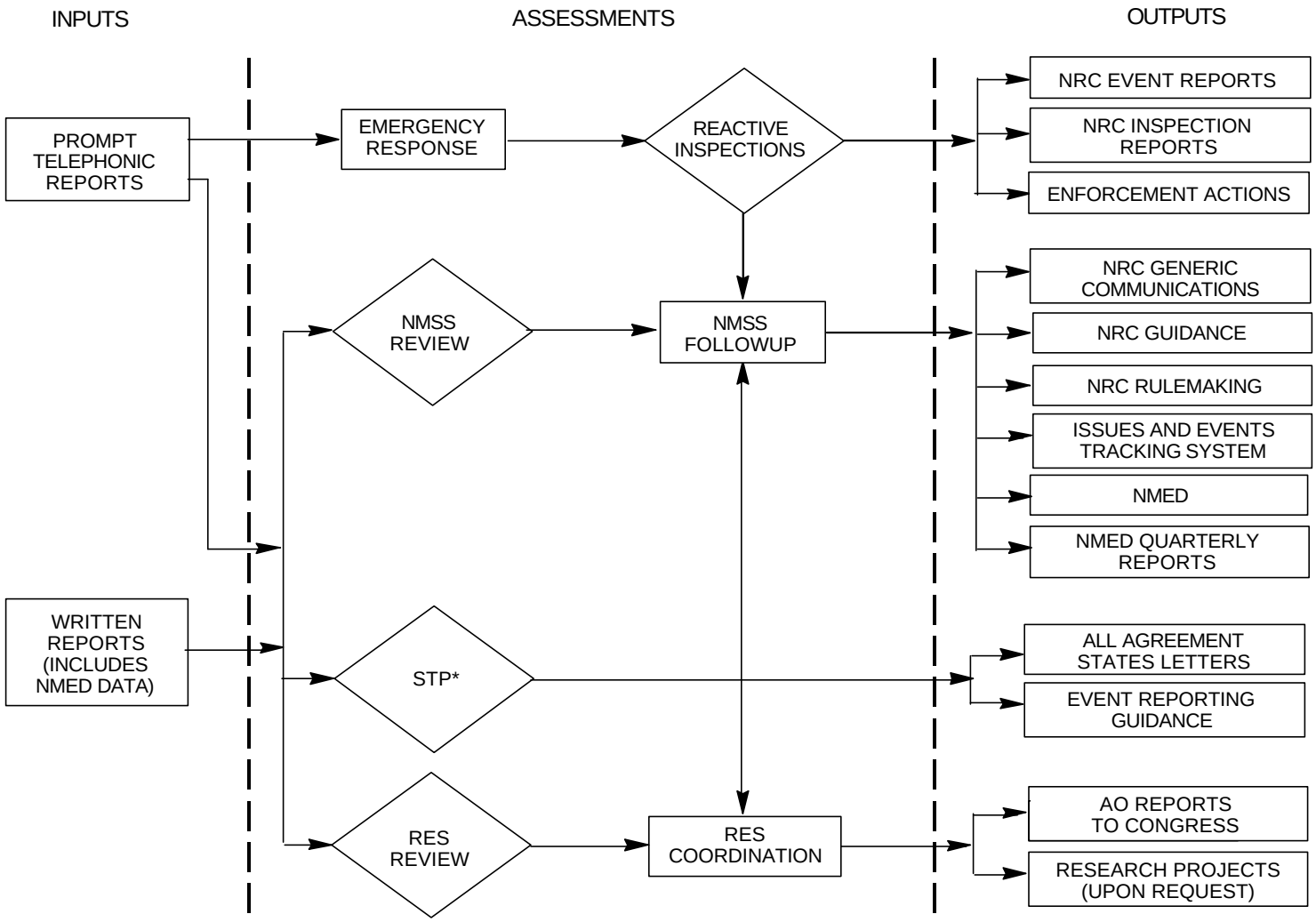
Do you use a time element or a process element for releasing event information to the public?

AS	NRC - Not Applicable
2	Time Element, please specify time frame:
7	Process Element
0	Upon receipt
7	After investigation/verification
1	After event is closed
8	Upon request only
5	Other, please specify:

Comments:

AS

1. *Usually within 24 hours.*
2. *On occasion a press release will be made on a specific event.*
3. *We release information if event could endanger public. We also require licensee to release info.*
4. *Event information is normally released after the event is closed and on request. News releases are made after review and determination of public safety implications.*
5. *If the event has public health implications we may issue a notice or press release.*
6. *Information is released whenever questions are asked. This is done through the Division (along with the Department Public Information Officer notification).*
7. *Information relating to an event affecting the public health and safety (and is one that requires that the public be notified) is released as soon as the event is confirmed.*
8. *Case by case; sometimes upon receipt of information, sometimes upon request, and generally based on political sensitivity or public health perception.*
9. *Under (our state's) stature, information is a matter of public record. If requested, it must be provided unless there is an active investigation by law enforcement.*



* support NMSS in assessment of Agreement State events.

Figure B-1 NRC Materials Event Review Information Flow.

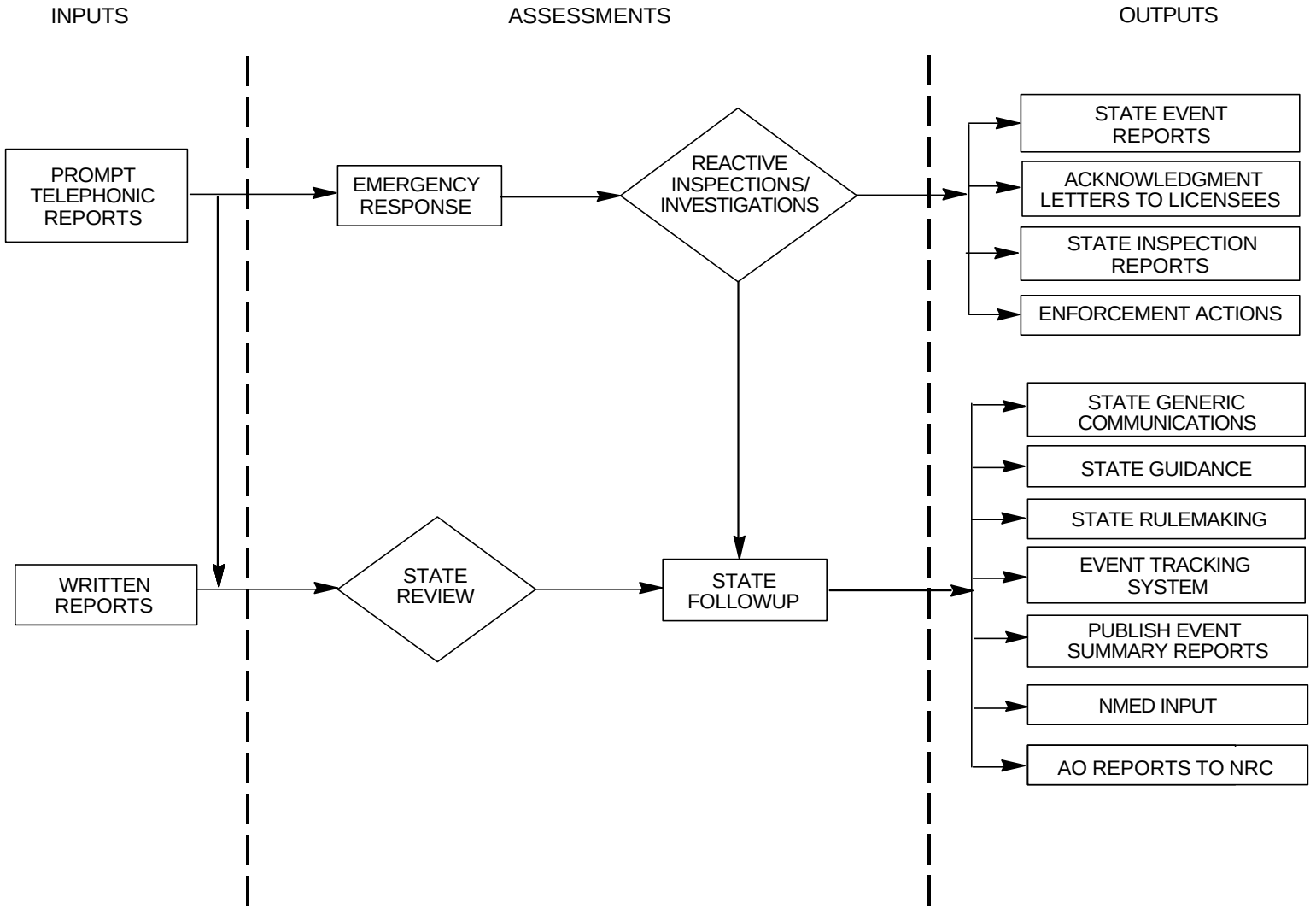


Figure B-2 Agreement State Materials Event Review Information Flow.

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APPENDIX C – EVENT ASSESSMENT LINKS TO THE NRC STRATEGIC PLAN (NUREG-1614)
NUCLEAR MATERIALS SAFETY ARENA

What is the goal?	What is the event measure?	What event data is needed?	What regulation obtains it?	What is missing or unneeded?
STRATEGIC GOAL: Prevent radiation-related deaths and illnesses, promote the common defense and security, and protect the environment in the use of source, byproduct, and special nuclear material	No deaths from acute radiation exposure or other hazardous materials used or produced from licensed material	Need 1 - Deaths from acute radiation exposure or other hazardous materials.	None directly. We expect to learn of deaths while investigating overexposures and emergency declarations. See 20.2202(a)(1) and 35.33(a)(1).	Missing clear requirement to report deaths from acute radiation exposure or other hazardous materials.
	No more that six events/year resulting in significant radiation or hazardous materials exposure	Need 2 - Radiation exposures that result in unintended, permanent, functional damage to an organ or a physiological system as determined by a physician.	None directly. We expect to learn of permanent damage to organs or physiological systems from medical consultants (physicians) asked to review overexposures. See 20.2202(a)(1) and 35.33(a)(1) for radiation exposures. Also see proposed changes to Part 35.	Missing clear requirement to report radiation exposure resulting in permanent, functional damage to an organ or physiological system. Missing a measure that captures the failure of radiation safety programs to prevent significant exposures, regardless of a person's ability to recover.
		Need 3 - Hazardous material exposures that result in unintended, permanent, functional damage to an organ or a physiological system as determined by a physician. (Applies to fuel cycle and uranium recovery activities only)	Section (a)(3) in Appendix A of Part 70 requires reports of acute chemical exposures that *could* endanger life or lead to serious health effects. There are no requirements in Parts 40 and 76, but an emergency declaration may provide information indirectly.	Missing consistent requirements for all fuel cycle and uranium recovery activities. Missing a measure that captures the failure of chemical safety programs to prevent significant exposures, regardless of a person's ability to recover.
	No events resulting in releases that cause an adverse impact on the environment	Need 4 - Releases that cause adverse impact on the environment. "Adverse impact" is undefined, but we have been using Criteria I.B.1 of the abnormal occurrence criteria (release to unrestricted area in concentrations which, if averaged over 24 hours, exceed 5000 times Table 2 of Appendix B to Part 20).	Appendix A of Part 70 requires reports of events that result in failure to meet the performance requirements in 70.61 which includes this criteria. However, this criteria appears in no other part. 20.2203(a)(3)(ii) requires 30-day report of concentrations in an unrestricted area exceeding 10 times any applicable limit. (There is an indirect requirement in 20.2202, but it requires possibility of intake by an individual.)	Missing consistent requirements for all licensees to report releases that cause adverse impact.

APPENDIX C

Nuclear Materials Safety Arena

What is the goal?	What is the event measure?	What event data is needed?	What regulation obtains it?	What is missing or unneeded?
STRATEGIC GOAL: continued	No losses, thefts, or diversion of formula quantities of SNM; radiological sabotages; or unauthorized enrichment.	Need 5 - Safeguards events specified in Appendix G of Part 73, and loss/theft/unauthorized production as specified in 10 CFR 74.11(a).	Appendix G of Part 73, and 74.11(a)	Nothing
	No unauthorized disclosures or compromises of classified information causing damage to national security.	Need 6 - Events specified in 10 CFR 95.57.	95.57	Nothing
PERFORMANCE GOAL 1: Maintain safety, protection of the environment, and the common defense and security ***Strategy:*** *Improve regulatory framework to increase focus on safety and safeguards including incremental use of risk-informed, and where appropriate, less prescriptive performance-based regulatory approaches*. ***Strategy:*** *Respond to operational events.*	No more than 350 losses of control of licensed material per year.	Need 7 - Licensed material entering the public domain in an uncontrolled manner.	20.1906 ---- Pkg contam 20.2201 ---- Lost/stolen/ missing 20.2202 ---- Release 20.2203 ---- Concentrations in unrestricted areas 20 App. G -- Missing shipment + 73.27(b) + 73.71(a)(1) 30.55(c) ----- Theft/diversion of tritium + 150.16(b)(1) 39.77(a) ---- Ruptured well-logging source 40.26(c)(2) - Tailings/waste dam failure 40.64(c) ---- Theft/diversion of U or Th + 150.17(c) 70.52(b) ---- Loss/theft/ diversion of SNM + 72.74(a) + 74.11(a) + 74.57(f)(2) + 76.120(a)(2) and (a)(3) + 150.19(c)	Missing clear link to public domain. Regulations written in terms of unrestricted areas. Missing clear link to actual losses of control. “Attempted” thefts and events that “threaten to cause” a release are reportable.

APPENDIX C

Nuclear Materials Safety Arena

What is the goal?	What is the event measure?	What event data is needed?	What regulation obtains it?	What is missing or unneeded?
PERFORMANCE GOAL 1: continued	No occurrences of accidental criticality.	Need 8 - Occurrences of accidental criticality.	70.52(a) 72.74 76.120(a)(1)	Missing strategic measure counterpart to this performance measure. A criticality accident is pretty catastrophic. The loss of criticality controls would be a better performance measure.
	No more than 20 events per year resulting in radiation overexposures from radioactive material that exceed applicable regulatory limits.	Need 9 - Exposures that exceed limits in 20.2203(a)(2). Need 10 - For fuel cycle facilities, this extends to other hazardous materials consistent with amendments to 10 CFR Part 70. Reportable chemical exposures are those that exceed license commitments. It would also include chemical exposures involving uranium recovery activities under the Uranium Mill Tailings Radiation Control Act.	20.2203(a)(2) Section (b)(3) in Appendix A of Part 70. There are no chemical exposure reporting requirements in Part 40 or 76.	Nothing Missing consistent reporting requirements for all fuel cycle facilities.
	No more than 45 medical events per year.	Need 11 - Medical events as reported under Part 35.	35.33(a)(1)	Missing clear definition of “medical event.” Will be resolved when new Part 35 issued.
	No more than 40 releases per year to the environment of radioactive material from operating facilities that exceed the regulatory limits.	Need 12 - Releases reportable under 20.2203(a)(3)	20.2203(a)(3)	Nothing
	No non-radiological events that occur during NRC-regulated operations that cause impacts on the environment that can’t be mitigated within applicable regulatory limits, using reasonably available methods.	Need 13 - Chemical releases from NRC regulated activities under the Uranium Mill Tailings Radiation Control Act that cause impacts on the environment that can’t be mitigated within applicable regulatory limits, using reasonably available methods.	None directly. 20.2202 and 40.60(b)(1) are written for radioactive releases and radioactive contamination events, not chemical events. There is a license condition to notify NRC project manager if another agency is notified of a chemical spill.	Missing clear requirement for uranium recovery licensees to report chemical releases that can’t be mitigated.

APPENDIX C

Nuclear Materials Safety Arena

What is the goal?	What is the event measure?	What event data is needed?	What regulation obtains it?	What is missing or unneeded?
PERFORMANCE GOAL 1: continued	No more than five substantiated cases per year of attempted malevolent use of source, byproduct, or SNM.	Need 14 - Substantiated cases of attempted malevolent use of source, byproduct or SNM.	None directly. Past practice has been to review deliberate violations for signs of malevolent use.	Missing clear requirement to report attempted malevolent use.
	No breakdowns of physical protection or material control and accounting systems resulting in a vulnerability to radiological sabotage, theft, diversion, or unauthorized enrichment of SNM.	None. This is inspection-related, not event-related.	None.	Nothing
PERFORMANCE GOAL 2: Increase Public Confidence ***Strategy:*** *Communicate more clearly. Add more focus, clarity, and consistency to our message, be timely, and present candid and factual information in proper context with respect to the risk of the activity.* ***Strategy:*** *Enhance NRC's accountability and credibility as a well-managed, independent regulatory agency and increase efforts to share accomplishments with the public.*	There are no event-related measures.	None	None	Need regular communications explaining what we have learned from event reports and how we have responded. Communications need to be frequent, short, and clear.
PERFORMANCE GOAL 3: Make NRC activities and decisions more effective, efficient, and realistic ***Strategy:*** *Improve regulatory framework.* ***Strategy:*** *Modify processes based on effectiveness reviews to maximize opportunities to improve process.* ***Strategy:*** *Improve efficiency and effectiveness by continuing to evolve along with Agreement States materials programs into a single "National Materials Program"*	There are no event-related measures.	None.	None.	

APPENDIX C

Nuclear Materials Safety Arena

What is the goal?	What is the event measure?	What event data is needed?	What regulation obtains it?	What is missing or unneeded?
PERFORMANCE GOAL 4: Reduce unnecessary regulatory burden ***Strategy:*** *Improve regulatory framework.* ***Strategy:*** *Improve and execute our programs and processes to reduce unnecessary costs.* ***Strategy:*** *Actively seek stakeholder input to identify opportunities for reducing unnecessary regulatory burden.*	There are no event-related measures.	None.	None.	

Appendix C
Nuclear Waste Safety Arena

What is the goal?	What is the event measure?	What event data is needed?	What regulation obtains it?	What is missing or unneeded?
STRATEGIC GOAL: Prevent significant adverse impacts from radioactive waste to the current and future public health and safety and the environment, and promote the common defense and security.	No deaths from acute radiation exposures from radioactive waste.	See Need 1.		
	No events resulting in significant radiation exposures from radioactive waste.	See Need 2.		
	No releases of radioactive waste causing an adverse impact on the environment.	See Need 4.		
	No losses, thefts, diversions, or radiological sabotages of SNM or radioactive waste.	See Need 5.		
PERFORMANCE GOAL 1: Maintain safety, protection of the environment, and the common defense and security ***Strategy:*** *Improve regulatory framework to increase focus on safety and safeguards including incremental use of risk-informed, and where appropriate, less prescriptive performance-based regulatory approaches*. ***Strategy:*** *Respond to operational events.*	No events resulting in radiation overexposures from radioactive waste that exceed applicable regulatory limits.	See Need 9.		
	No breakdowns of physical protection resulting in a vulnerability to radiological sabotage, theft, diversion, or loss of SNM or radioactive waste.	None. This is inspection-related, not event-related.		
	No radiological releases to the environment from operational activities that exceed the regulatory limits.	See Need 12.		
	No instances where radioactive waste and materials under NRC's regulatory jurisdiction cannot be handled, transported, stored, or disposed of safely now or in the future.	None. Not event-related.		

Appendix C
Nuclear Waste Safety Arena

What is the goal?	What is the event measure?	What event data is needed?	What regulation obtains it?	What is missing or unneeded?
PERFORMANCE GOAL 2: Increase Public Confidence ***Strategy:*** *Communicate more clearly. Add more focus, clarity, and consistency to our message, be timely, and present candid and factual information in proper context with respect to the risk of the activity.* ***Strategy:*** *Enhance NRC's accountability and credibility as a well-managed, independent regulatory agency and increase efforts to share accomplishments with the public.*	There are no event-related measures.	None	None	Need regular communications explaining what we have learned from event reports and how we have responded. Communications need to be frequent, short, and clear.
PERFORMANCE GOAL 3: Make NRC activities and decisions more effective, efficient, and realistic ***Strategy:*** *Improve regulatory framework.* ***Strategy:*** *Modify processes based on effectiveness reviews to maximize opportunities to improve process.*	There are no event-related measures.	None.	None.	

Appendix C
Nuclear Waste Safety Arena

What is the goal?	What is the event measure?	What event data is needed?	What regulation obtains it?	What is missing or unneeded?
PERFORMANCE GOAL 4: Reduce unnecessary regulatory burden ***Strategy:*** *Improve regulatory framework.* ***Strategy:*** *Improve and execute our programs and processes to reduce unnecessary costs*. ***Strategy:*** *Actively seek stakeholder input to identify opportunities for reducing unnecessary regulatory burden.*	There are no event-related measures.	None.	None.	

APPENDIX D – REVIEW OF NRC REPORTING REQUIREMENTS (AS OF JANUARY 2001)

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
Part 20 - Standards for Protection Against Radiation					
20.1906(d)(1)	(Immediate report) Removable contamination on package	–	D/H&S	Varies (low)	Contaminated packages have generally low safety significance. Consider 24-hour report to NRC (keep immediate report to carrier)
(d)(2)	(Immediate report) Radiation levels on package	–	D/H&S	Varies (moderate)	Locate or reference both in Reports Section (Subpart M)
20.2201(a)(1)(i)	(Immediate report) Lost/stolen/missing material ≥ 1000 X App. C value	Need 7	C	Varies (moderate)	
(a)(1)(ii)	(30-day report) Lost/stolen/missing material ≥ 10 X App. C value	Need 7	C	Low	
20.2202(a)(1)	(Immediate report) Exposure (real or threatened) ≥ TEDE of 25 rem, or LDE of 75 rem, or SDE (WB or ME) of 250 rads	Need 1 Need 2 Need 7	C	High	
(b)(1)	(24-hour report) Exposure (real or threatened) ≥ TEDE of 5 rem, or LDE of 15 rem, or SDE (WB or ME) of 50 rads	Need 7	C	Moderate	
20.2202(a)(2)	(Immediate report) Release where individual could have intake > 5 X ALI over 24 hrs.	Need 4 Need 7	C	High	
(b)(2)	(24-hour report) Release where individual could have intake > 1 X ALI over 24 hrs.	Need 7	C	Moderate	
20.2203(a)(2)	(30-day report) Doses in excess of the limits in 20.1201, 20.1207, 20.1208, 20.1301, the license, or ALARA constraints for air emissions in 20.1101(d)	Need 9	C	Moderate	

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
20.2203(a)(3)(i)	(30-day report) Levels of radiation or concentrations of radioactive material in a restricted area in excess of any applicable limit in the license.	Need 12	C	Low	
(a)(3)(ii)	(30-day report) Levels of radiation or concentrations of radioactive material in an unrestricted area in excess of 10 times any applicable limit in Part 20 or in the license.	Need 4 Need 7 Need 12	C	Low	
20.2203(a)(4)	(30-day report) For licensees subject to EPA standards in 10 CFR Part 190, levels of radiation or releases of radioactive material in excess of those standards, or license conditions related to those standards.	Need 7	C	Low	
20 App. G III.D.3	(60-day report) Notification of missing shipment of radioactive waste (made by land disposal operator)	Need 7	B	Low	Locate or reference in Reports Section (Subpart M)
20.App. G III.E.2	(2-week report) Written report of trace investigation of missing shipment (made by shipper)	–	B	Low	Locate or reference in Reports Section (Subpart M)
Part 21 - Reporting of Defects and Noncompliance					
21.21(a)(2)	(60-day report) Interim evaluation report that basic component may be defective, or may not comply with procurement document.	–	None	Varies (Low)	
(c)	(2-day report) Receipt of information reasonably indicating that a basic component is defective or fails to comply with its procurement document.	–	None	Varies (Low)	
Part 26 - Fitness for Duty Programs					
26.27(d)	(Immediate report) Notification of NRC employee's unfitness for duty	–	None	Low	Inconsistent with report for licensee employee. Consider 24-hour report. Locate or reference in Reports Section (26.73)
26.73	(24-hour report) Fitness-for-duty significant event report	–	None	Low	

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
Part 30 - Rules of General Applicability to Domestic Licensing of Byproduct Material					
30.9(b)	(2-day report) Receipt of any information having significant implication for public health and safety	–	D	Varies (Low)	Locate or reference in Reports Section (30.50 series)
30.34(h)	(Immediate report) The filing of any petition for bankruptcy by or against the licensee, its parent, or an affiliate.	–	D/H&S	Varies (Low)	Material typically in storage. Question need for immediate action. Consider for 2-5 day report. Locate or reference in Reports Section (30.50 series). Require submittal of report to Document Control Desk with copy to Regional Administrator.
30.50(a)	(4-hour report) Event that prevents immediate protective actions necessary to avoid overexposure or releases.	–	C	Varies (Moderate)	"Prevents immediate protective actions" is vague and difficult to interpret. Consider replacing with report of emergency actions similar to 72.75(b)(4).
30.50(b)(1)	(24-hour report) Unplanned contamination requiring access to be restricted for more than 24 hours (for reason other than decay of isotopes with half-lives < 24 hours).	–	C	Varies (Low)	
30.50(b)(2)	(24-hour report) Safety equipment is disabled or fails to function when it is required to be available and operable, and no redundant equipment is available and operable.	–	C	Varies (Low)	
30.50(b)(3)	(24-hour report) An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body.	–	C	Varies (Low)	
30.50(b)(4)	(24-hour report) An unplanned fire or explosion damaging license material or any device, container, or equipment containing licensed material	–	C	Varies (Low)	
30.55(c)	(Prompt report) Attempted theft or unlawful diversion of tritium (10 curies at 1 time or 100 curies in a year)	Need 7	NRC (but 150.19 applies to AS licensees)	Low	Consider raising threshold or deleting requirement. One exit sign can exceed 10 curies.

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
Standard License Condition 165 in Volume 20 of NUREG-1556	(30-day report) Miscellaneous sealed source leak test results (presence of 0.005 microcuries or more of removable RAM) shall be reported in accordance with 30.50(c)(2).	–	N/A	Low	Inconsistent with 5-day report required by other leak test regulations. Consider need for consistent requirements.
Part 31 - General Domestic Licenses for Byproduct Material					
31.5(c)(5)	(30-day report) Failure of, or damage to; or indication of possible failure of, or damage to the shielding, on-off mechanism, or indicator; or detection of 0.005 microcuries of removable RAM	–	C	Low	Consider establishing Reports Section in Part 31 including this report plus a clear list of all the reports invoked by 31.2(a) and 31.5(c)(13)(ii).
Part 34 - Licenses for Industrial Radiography					
34.27(d)	(5-day report) Radiography sealed source leak test results (presence of 0.005 microcuries or more of removable RAM)	–	C	Low	Locate or reference in Reports Section (Subpart F).
34.101(a)	(30-day report) Any of the following incidents involving radiographic equipment: (1) Unintentional disconnect of source assembly (2) Inability to retract and secure source assembly (3) Failure of any component critical to safe operation to perform its intended function	–	C	Moderate	
Part 35 - Medical Use of Byproduct Material					
35.33(a)(1)	(1-day report) Medical misadministration	Need 1 Need 2 Need 11	C	Varies (Moderate)	*Note: New Part 35 establishes a Reports Section (Subpart M).*
35.59(e)(2)	(5-day report) Medical sealed source leak test results (presence of 0.005 microcuries or more of removable RAM)	–	D/H&S	Low	Compatibility inconsistent with other leak test requirements. Suggest compatibility “C.”
Standard License Condition 114 in Volume 20 of NUREG-1556	(5-day report) Gamma stereotactic radiosurgery (Gamma Knife) unit sealed source leak test results (presence of 0.005 microcuries or more of removable RAM)	–	N/A	Low	*Note: Revision of Part 35 will supersede this condition.*

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
Part 36 - Licenses for Irradiators					
36.83(a)	(24-hour report) Irradiator events meeting the following conditions if not reported under other parts of NRC regulations: (1) Source stuck in unshielded position. (2) Fire or explosion in a radiation room. (3) Damage to the source racks. (4) Failure of source rack cable or drive mechanism. (5) Inoperable access control system. (6) Detection of radiation by product exit monitor. (7) Detection of radioactive contamination. (8) Structural damage to pool liner or walls. (9) Abnormal water loss or leakage from pool. (10) Pool water conductivity exceeding 100 microsiemens per centimeter.	–	C	Varies (Low)	
Part 39 - Licenses for Well Logging					
39.35(d)(2)	(5-day report) Well logging sealed source leak test results (presence of 0.005 microcuries or more of removable RAM)	–	B	Low	Compatibility inconsistent with other leak test requirements. Suggest compatibility “C.” Locate or reference in Reports Section (Subpart E).
39.77(a)	(Immediate report) Actual or potential rupture of sealed source capsule	–	C	Moderate	
39.77(b)	(Various reports) Events reportable under 20.2201, 20.2202, 20.2203, and 30.50.	–	D	Varies (Low)	Redundant requirement. Consider deleting.
39.77(c)(1)	(Report when apparent) Irretrievable sealed source & request for approval to abandonment	–	C	Low	Report appears to be rubber stamp. Consider authorizing licensees to abandon and simply notify NRC.

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
Part 40 - Domestic Licensing of Source Material					
40.9(b)	(2-day report) Information having a significant implication for public health and safety or common defense & security	–	D	Varies (Low)	Locate or reference in Reports Section (40.60 series).
40.26(c)(2)	(Immediate report) Failure, or unusual conditions that if not corrected could lead to failure, in a tailings or waste retention system that results, or could result in release of tailings or waste into unrestricted area	–	C	Moderate	Locate or reference in Reports Section (40.60 series).
40.41(f)	(Immediate report) The filing of any petition for bankruptcy by or against the licensee, its parent, or an affiliate.	–	D	Varies (Low)	Material typically in storage. Question need for immediate action. Consider for 2-5 day report. Locate or reference in Reports Section (40.60 series). Require submittal of report to Document Control Desk with copy to Regional Administrator.
40.60(a)	(4-hour report) Event that prevents immediate protective actions necessary to avoid exposures to radiation or RAM or releases of licensed materials that could exceed reg limits	–	C	Varies (Moderate)	"Prevents immediate protective actions" is vague and difficult to interpret. Consider replacing with report of emergency actions similar to 72.75(b)(4).
40.60(b)(1)	(24-hour report) Unplanned contamination requiring access to be restricted for more than 24 hours (for reason other than decay of isotopes with half-lives < 24 hours).	Need 13	C	Varies (Low)	
40.60(b)(2)	(24-hour report) Safety equipment is disabled or fails to function when it is required to be available and operable, and no redundant equipment is available and operable.	–	C	Varies (Low)	
40.60(b)(3)	(24-hour report) An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body.	–	C	Varies (Low)	

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
40.60(b)(4)	(24-hour report) An unplanned fire or explosion damaging license material or any device, container, or equipment containing licensed material	–	C	Varies (Low)	
40.64(c)	(Prompt report) Attempted theft or unlawful diversion of more than 15 lbs. of uranium or thorium at 1 time or more than 150 lbs. in a calendar year	Need 7	NRC (but 150.17 applies to AS licensees)	Low	Consider raising threshold or deleting requirement. General license in 40.22 authorizes these quantities.
40 App A I Criterion 8A	(Immediate report) Failure or unusual conditions in a tailings or waste retention system [that could result in, or if left uncorrected could result in, the release of tailings or waste into unrestricted areas]	–	C States with authority D States without authority	Moderate	Locate or reference in Reports Section (40.60 series).
Standard License Condition in Section 5.7.8.3 of NUREG-1569	(24-hour report) In-situ leach groundwater monitoring well where any two excursion indicators have exceeded their respective upper control limit (UCL), or a single excursion indicator has exceeded its UCL by 20%.	–	N/A	Low	No immediate actions by NRC are required. Consider 30-day written report.
Part 60 - Disposal of High-Level Radioactive Wastes in Geologic Repositories					
60.10(b)	(2-day report) Information having a significant implication for public health & safety or common defense & security	–	NRC	Varies (Low)	Locate or reference in Reports Section (Subpart D)
60.73	(Prompt report) Each deficiency found in the characteristics of the site, and design and construction of the geologic repository operations area which, were it to remain uncorrected, could: (a) be a substantial safety hazard, (b) represent a significant deviation from the design criteria and design bases stated in the application, or (c) represent a deviation from the conditions stated in the terms of a construction authorization or the license, including license specifications.	–	NRC	Varies (Low)	
Part 70 - Domestic Licensing of Special Nuclear Material					
70.9(b)	(2-day report) Information having a significant implication for public health & safety or common defense & security	–	D	Varies (Low)	Locate or reference in Reports Section (Subpart G).

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
70.32(a)(9)	(Immediate report) The filing of any petition for bankruptcy by or against the licensee, its parent, or an affiliate.	–	D/H&S	Varies (Low)	Material typically in storage. Question need for immediate action. Consider for 2-5 day report. Locate or reference in Reports Section (Subpart G). Require submittal of report to Document Control Desk with copy to Regional Administrator.
70.50(a)	(4-hour report) Event that prevents immediate protection actions necessary to avoid exposure to radiation or RAM or releases of licensed material that could exceed regulatory limits	–	C	Varies (Moderate)	"Prevents immediate protective actions" is vague and difficult to interpret. Consider replacing with report of emergency actions similar to 72.75(b)(4).
70.50(b)(1)	(24-hour report) Unplanned contamination requiring access to be restricted for more than 24 hours (for reason other than decay of isotopes with half-lives < 24 hours).	–	C	Varies (Low)	
70.50(b)(2)	(24-hour report) Safety equipment is disabled or fails to function when it is required to be available and operable, and no redundant equipment is available and operable.	–	C	Varies (Low)	
70.50(b)(3)	(24-hour report) An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body.	–	C	Varies (Low)	
70.50(b)(4)	(24-hour report) An unplanned fire or explosion damaging license material or any device, container, or equipment containing licensed material	–	C	Varies (Low)	
70.52(a)	(1-hour report) Accidental criticality or of any loss, other than normal operating loss, of SNM	Need 7 Need 8	NRC	High	The loss portion of this regulation is redundant with 20.2201. Consider deleting loss portion.
70.52(b)	(1-hour report) Loss or theft or unlawful diversion of SNM or of any attempted theft or unlawful diversion of such material	Need 7	NRC	Moderate	This conflicts with thresholds for lost material in 20.2201. Consider using 20.2201 for actual losses and limiting this to attempted thefts of similar quantities.

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
70 App A Sec. (a)(1)	(1-hour report) An inadvertent nuclear criticality	Need 8	NRC	High	Redundant with 70.52(a) Consider consolidating regulations
70 App A Sec. (a)(2)	(1-hour report) Acute intake of 30 mg or greater of uranium in soluble form	Need 3 Need 10	NRC	High	
70 App A Sec. (a)(3)	(1-hour report) Acute chemical exposure that exceeds standards established under 70.61(b)(4)	Need 3 Need 10	NRC	High	
70 App A Sec. (a)(4)	(1-hour report) Event or condition such that no items relied on for safety, as documented in the Integrated Safety Analysis summary, remain available and reliable, in an accident sequence evaluated in the Integrated Safety Analysis, to perform their function: (i) In the context of the performance requirements in Sec. 70.61(b) and Sec. 70.61(c), or (ii) Prevent a nuclear criticality accident (i.e., loss of all controls in a particular sequence)	–	NRC	Varies (Moderate)	
70 App A Sec. (a)(5)	(1-hour report) Loss of controls such that only one item relied on for safety, as documented in the Integrated Safety Analysis summary, remains available and reliable to prevent a nuclear criticality accident, and has been in this state for greater than eight hours	–	NRC	Varies (Moderate)	
70 App A Sec. (b)(1)	(24-hour report) Any event or condition that results in the facility being in a state that was not analyzed, was improperly analyzed, or is different from that analyzed in the Integrated Safety Analysis, and which results in failure to meet the performance requirements of Sec. 70.61	–	NRC	Varies (Moderate)	
70 App A Sec. (b)(2)	(24-hour report) Loss or degradation of items relied on for safety that results in failure to meet the performance requirement of Sec. 70.61	–	NRC	Varies (Moderate)	
70 App A Sec. (b)(3)	(24-hour report) An acute chemical exposure to an individual that exceeds the quantitative standards that satisfy the requirements of Sec. 70.61(c)(4)	Need 3 Need 10	NRC	Varies (Moderate)	

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
70 App A Sec. (b)(4)	(24-hour report) Any natural phenomenon or other external event, including fires internal and external to the facility, that has affected or may have affected the intended safety function or availability or reliability of one or more items relied on for safety	–	NRC	Varies (Low)	
70 App A Sec. (b)(5)	(24-hour report) An occurrence of an event or process deviation that was considered in the Integrated Safety Analysis and: (i) Was dismissed due to its likelihood; or (ii) Was categorized as unlikely and whose associated unmitigated consequences would have exceeded those in Sec. 70.61(b) had the item(s) relied on for safety not performed their safety function(s)	–	NRC	Varies (Low)	
70 App A Sec. (c)	(Concurrent report) Any event or situation, related to the health and safety of the public or onsite personnel, or protection of the environment, for which a news release is planned or notification to other government agencies has been or will be made	–	NRC	Low	
Part 71 - Packaging and Transportation of Radioactive Material					
71.6a(b)	(2-day report) Information having a significant implication for public health & safety or common defense & security	–	D	Varies (Low)	Locate or reference in Reports Section (71.95).
71.95(a) (b)	(30-day report) Significant reduction in effectiveness of authorized packaging during use (30-day report) Safety defects in packaging after first use	–	D	Varies (moderate) Varies (Low)	
Part 72 - Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste					
72.11(b)	(2-day report) Information having significant implication for public health & safety or common defense & security	–	NRC	Varies (Low)	Locate or reference in Reports Section (Subpart D).

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
72.44(b)(6)	(Immediate report) The filing of any petition for bankruptcy by or against the licensee, its parent, or an affiliate.	–	NRC	Varies (Low)	Material typically in storage. Question need for immediate action. Consider for 2-5 day report. Locate or reference in Reports Section (Subpart D). Require submittal of report to Document Control Desk with copy to Regional Administrator
72.74(a)	(1-hour report) Accidental criticality or loss of SNM	Need 7 Need 8	NRC	High	The loss portion of this regulation is redundant with 20.2201. Consider deleting loss portion.
72.75(a)	(1-hour report) Declaration of an emergency as specified in the licensee's approved emergency plan	–	NRC	Moderate	
72.75(b)(1)	(4-hour report) Event that prevents immediate protection actions necessary to avoid exposure to radiation or RAM or releases of licensed material that could exceed regulatory limits	–	NRC	Varies (Moderate)	"Prevents immediate protective actions" is vague and difficult to interpret. Consider deleting. Reporting emergency actions under 72.75(b)(4) is sufficient.
72.75(b)(2)	(4-hour report) A defect in any spent fuel storage structure, system, or component which is important to safety	–	NRC	Varies (Low)	
72.75(b)(3)	(4-hour report) A significant reduction in the effectiveness of any spent fuel confinement system during use.	–	NRC	Varies (Low)	
72.75(b)(4)	(4-hour report) An action taken in an emergency that departs from a condition or technical specification in a license or certificate of compliance when the action is immediately needed to protect public health and safety and no action consistent with the license or certificate of compliance is immediately apparent.	–	NRC	Varies (Low)	
72.75(b)(5)	(4-hour report) An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body.	–	NRC	Varies (Low)	

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
72.75(b)(6)	(4-hour report) An unplanned fire or explosion damaging license material or any device, container, or equipment containing licensed material	–	NRC	Varies (Low)	
72.75(c)(1)	(24-hour report) Unplanned contamination requiring access to be restricted for more than 24 hours (for reason other than decay of isotopes with half-lives < 24 hours).	–	NRC	Varies (Low)	
72.75(c)(2)	(24-hour report) Safety equipment is disabled or fails to function when it is required to be available and operable, and no redundant equipment is available and operable.	–	NRC	Varies (Low)	
72.242(d)	(30-day report) A design or fabrication deficiency, for any spent fuel storage cask which has been delivered to a licensee, when the design or fabrication deficiency affects the ability of structures, systems, and components important to safety to perform their intended safety function.	–	NRC	Varies (low)	Inconsistent with 4-hour report required by 72.75(b)(2) for similar problem. Consider making reporting times consistent.
Part 73 - Physical Protection of Plants and Materials					
73.26(i)(6)	(Immediate report) Failure to receive call at the movement control center from shipment or escort personnel (road shipment)	–	NRC	Low	Locate or reference in Reports Section (73.70 series).
73.26(k)(4)	(Immediate report) Failure to receive call at the movement control center from shipment or escort personnel (rail shipment)	–	NRC	Low	Locate or reference in Reports Section (73.70 series).
73.27(b)	(Immediate report) Lost or unaccounted for shipment of SSNM [made by licensee receiving formula quantities of strategic SNM]	Need 7	NRC	Moderate	Locate or reference in Reports Section (73.70 series).
73.27(b)	(Immediate report) Lost or unaccounted for shipment of SSNM (made by licensee who is consignor when consignee is DOE license-exempt contractor receiving formula quantities of SSNM]	Need 7	NRC	Moderate	Locate or reference in Reports Section (73.70 series).
73.71(a)(1)	(1-hour report) Initial notification of loss shipment of SNM or spent fuel	Need 7	NRC	Moderate	
73.71(b)(1)	(1-hour report) Initial notification of safeguards event described in Appendix G of Part 73.	Need 5	NRC	Moderate	

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
Part 74 - Material Control and Accounting of Special Nuclear Material					
74.11(a)	(1-hour report) Loss, theft, or unlawful diversion of SNM (or attempted theft or diversion]	Need 5 Need 7	NRC	Moderate	This conflicts with thresholds for lost material in 20.2201. Consider using 20.2201 for actual losses and limiting this to attempted thefts of similar quantities.
74.11(a)	(1-hour report) Notification of unauthorized production of enriched uranium	Need 5	NRC	Low	
74.13(b)	(30-day report) Report of excessive inventory difference	–	NRC	Low	
74.57(c)	(24-hour report) Notification of unresolved material control & accounting alarm	–	NRC	Low	Locate or reference in Reports Section (Subpart B).
74.57(f)(2)	(24-hour report) Notification of initiation of MC&A alarm resolution procedure [when abrupt loss detection estimate exceeds 5 formula kilograms of SSNM]	Need 7	NRC	Low	Locate or reference in Reports Section (Subpart B).
Part 75 - Safeguards on Nuclear Material - Implementation of US/IAEA Agreement					
75.36(b)	(Immediate report) Special report of occurrence of event described in license conditions, including: the possibility of loss of nuclear material in excess of specified limits & unexpected changes in containment to the extent that unauthorized removal of nuclear material has become possible	–	NRC	Moderate	
Part 76 - Certification of Gaseous Diffusion Plants					
76.9(b)	(2-day report) Information having significant implication for public health & safety or common defense & security	–	NRC	Varies (Low)	Locate or reference in Reports Section (Subpart F).
76.120(a)(1)	(1-hour report) A criticality event	Need 8	NRC	High	
76.120(a)(2)	(1-hour report) Any loss of SNM	Need 7	NRC	Moderate	This conflicts with thresholds for lost material in 20.2201. Consider deleting.

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
76.120(a)(3)	(1-hour report) Any theft or unlawful diversion of SNM (real or attempted)	Need 7	NRC	Moderate	This conflicts with thresholds for lost material in 20.2201. Consider using 20.2201 for actual losses and limiting this to attempted thefts of similar quantities.
76.120(a)(4)	(1-hour report) An emergency condition that has been declared an Alert or Site Area Emergency	Need 3	NRC	Moderate	
76.120(b)	(4-hour report) Event that prevents immediate protection actions necessary to avoid exposure to radiation or RAM or releases of licensed material that could exceed regulatory limits	–	NRC	Varies (Moderate)	"Prevents immediate protective actions" is vague and difficult to interpret. Consider replacing with report of emergency actions similar to 72.75(b)(4).
76.120(c)(1)	(24-hour report) Unplanned contamination requiring access to be restricted for more than 24 hours (for reason other than decay of isotopes with half-lives < 24 hours).	–	NRC	Varies (Low)	
76.120(c)(2)	(24-hour report) Safety equipment is disabled or fails to function when it is required to be available and operable, and no redundant equipment is available and operable.	–	NRC	Varies (Low)	
76.120(c)(3)	(24-hour report) An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body.	–	NRC	Varies (Low)	
76.120(c)(4)	(24-hour report) An unplanned fire or explosion damaging license material or any device, container, or equipment containing licensed material	–	NRC	Varies (Low)	

10 CFR	Reporting Requirement	Strategic Plan Link	Agreement State Compatibility[1]	Safety Significance[2]	Recommendation
Part 95 - Facility Security Clearance and Safeguarding of National Security Information and Restricted Data					
95.57(a)`	(1-hour report) Alleged or suspected violation of the AEA, Espionage Act, or other Federal statutes related to National Security Information or Restricted Data	Need 6	NRC	Low	
95.57(b)	(Monthly log) Infraction, loss, compromise, or possible compromise of National Security Information or Restricted Data or other classified documents [for incidents not falling under 95.57(a)	Need 6	NRC	Low	
Part 110 - Export and Import of Nuclear Equipment and Material					
110.7a(b)	(2-day report) Notification of information having a significant implication for public health or safety or common defense & security	–	NRC	Varies (Low)	Establish Reports Section (suggest Subpart E) and locate or reference in that section.
110.50(a)(7)	(Prompt report) Notification of violation or potential violation of packaging requirements of 10 CFR 71	–	NRC	Low	Establish Reports Section (suggest Subpart E) and locate or reference in that section.
Part 150 - Exemptions and Continued Regulatory Authority in Agreement States and in Offshore Waters					
150.16(b)(1)	(Immediate report) Initial notification of theft or unlawful diversion, or attempted theft or diversion, of SNM [from Agreement State licensee]	Need 7	NRC (but Agreement State should inform its licensees)	Moderate	See recommendation for 70.52(b).
150.17(c)	(Prompt report) Initial notification of attempted theft or unlawful diversion of uranium or thorium [from Agreement State licensee]	Need 7	NRC (but Agreement State should inform its licensees)	Low	See recommendation for 40.64(c).
150.19(c)	(Prompt report) Initial notification of attempted theft or unlawful diversion of more than 10 curies of tritium at one time or 100 curies in one calendar year [from Agreement State licensee]	Need 7	NRC (but Agreement State should inform its licensees)	Low	See recommendation for 30.55(c).

ENDNOTES:

1. Agreement State Compatibility
   A = Basic radiation protection standard. State should adopt essentially identical language.
   B = Significant transboundary implications. State should adopt essentially identical language.
   C = Program element. State should adopt essential objectives, but language can differ.
   D = Not required for compatibility. If adopted, should be compatible.
   NRC = Not required for compatibility. Regulatory area reserved to NRC.
   H&S = Particular health and safety significance. State should adopt essential objectives.

2. Safety Significance
   Low = Individuals not expected to exceed exposure limits.
   Moderate = Individuals could exceed exposure limits.
   High = Individuals could greatly exceed exposure limits.

APPENDIX E – DETAILED INFORMATION ABOUT NMED RECORDS

Table E-1 Status of NRC NMED Records That Need Additional Information Requested by the NMED Contractor Between October 13, 1999 And May 9, 2000.

No.	NMED #	Event Date	Initial Info. Request Date	Info. Received Date	Event Closed? As of 6/16/00	Event Closed? As of 11/13/00	What Info* Requested?
1	990385	6/21/99	11/9/99		No	No	
2	990389	6/24/99	11/9/99		No	No	
3	990409	6/30/99	11/10/99		No	No	
4	990427	7/12/99	4/26/00		No	No	
5	990455	7/19/99	11/10/99		No	No	
6	990474	7/19/99	11/10/99	11/23/99	Yes		
7	990487	7/20/99	11/10/99		Yes		
8	990491	7/14/99	11/9/99	11/16/99	Yes		
9	990495	7/20/99	3/29/00		No	No	
10	990519	7/26/99	11/10/99		No	No	
11	990546	7/8/99	3/29/00		No	No	
12	990561	8/12/99	3/23/00		No	No	
13	990575	8/17/99	11/9/99	11/10/99	Yes		
14	990577	8/20/99	3/23/00	4/6/00	Yes		
15	990595	5/1/99	11/10/99		No	No	
16	990596	6/29/99	11/10/99		No	No	
17	990605	2/2/99	11/10/99		Yes		
18	990620	9/13/99	3/23/00		No	No	
19	990628	9/15/99	11/18/99	11/23/99	Yes		
20	990635	9/21/99	11/11/99	3/17/00	Yes		
21	990697	10/1/99	3/15/00		No	No	
22	990740	10/18/99	11/18/99	12/20/99	Yes		
23	990760	7/15/99	3/14/00		No	Yes	
24	990761	10/20/99	3/14/00		Yes		
25	990767	7/9/99	11/11/99		Yes		
26	990777	10/21/99	11/18/99	12/23/99	Yes		

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No.	NMED #	Event Date	Initial Info. Request Date	Info. Received Date	Event Closed? As of 6/16/00	11/13/00	What Info* Requested?
27	990786	10/21/99	3/14/00	3/14/00	Yes		
28	990793	10/27/99	1/18/99	3/10/00	Yes		
29	990796	7/21/99	11/18/99		Yes		
30	990814	3/22/99	12/18/99		Yes		
31	990815	6/1/99	12/8/99		Yes		
32	990816	3/1/99	12/8/99		No	No	
33	990817	3/22/99	12/8/99		Yes		
34	990820	10/30/99	3/2/00		No	Yes	
35	990824	7/2/99	12/8/99	12/9/99	Yes		
36	990826	11/1/99	3/2/00		No	No	
37	990827	10/27/99	3/2/00	3/10/00	Yes		
38	990839	11/4/99	12/8/99		Yes		
39	990859	11/5/99	12/22/99		Yes		
40	990876	11/12/99	12/22/99		Yes		
41	990906	11/25/99	2/29/00		Yes		
42	990908	11/27/99	12/22/99		No	No	
43	990920	12/1/99	5/9/00		No	Yes	
44	990931	12/13/99	5/9/00	5/17/00	Yes		
45	990932	10/26/99	3/13/00		No	No	
46	990935	12/13/99	5/9/2000		No	No	1,2
47	990952	8/30/99	3/23/00		No	No	
48	990953	9/1/99	3/15/00	3/21/00	Yes		
49	990954	12/15/99	5/9/00		No	No	5,2
50	990956	10/6/99	5/9/00		No	Yes	2
51	990963	12/6/99	5/9/00		No	No	2,3,4,7,11
52	000039	11/23/99	2/9/00		No	No	
53	000048	7/13/99	3/23/00		No	No	

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No.	NMED #	Event Date	Initial Info. Request Date	Info. Received Date	Event Closed? As of 6/16/00	11/13/00	What Info* Requested?
54	000059	9/3/99	3/13/00		No	No	
55	000069	9/1/99	3/23/00	3/27/00	Yes		

* The numbers in this column refer to the following information that is needed to complete the NMED record:

1. Cause of the event
2. Corrective actions
3. Source activity level
4. Equipment model number and serial number
5. Source model number and serial number
6. Isotope of concern
7. Manufacturer
8. License number
9. Licensee name
10. Licensee (City and State)
11. Others (contamination survey results, personnel exposure, disposal method, etc.)

Table E-2 Status of Agreement State NMED Records that Need Additional Information Requested by the NMED Contractor Between October 13, 1999 and May 9, 2000.

No.	NMED #	Event Date	Initial Info. Request Date	Info. Received Date	Event Closed? As of 6/16/00	Event Closed? As of 11/13/00	What Info* Requested?
1	990316	5/13/99	10/14/99		No	No	
2	990320	5/19/99	10/14/99		No	No	
3	990322	4/23/99	10/14/99	10/19/00	Yes		
4	990372	1/28/99	10/15/99		No	No	
5	990373	2/2/99	10/15/99		No	No	
6	990374	3/15/99	10/15/99	10/18/99	Yes		
7	990384	6/14/99	10/14/00		No	No	
8	990401	4/16/99	10/15/00	10/18/99	Yes		
9	990402	3/31/99	10/15/99	10/18/99	Yes		
10	990413	7/1/99	4/26/00	5/1/00	Yes		1,2,3,6,7,11
11	990416	7/2/99	4/26/00	4/27/00	Yes		1,2
12	990417	3/22/99	10/15/99		No	No	
13	990422	7/8/99	4/26/00	5/1/00	Yes		1,2
14	990431	1/14/99	10/15/99	12/9/99	No	No	
15	990432	4/6/99	10/15/99	12/9/99	No	No	1,2,3
16	990435	5/17/99	10/15/99		No	No	
17	990440	7/10/99	10/15/99		Yes		
18	990445	7/5/99	3/29/00	3/30/00	Yes		
19	990446	4/6/99	10/15/99	12/9/99	Yes		
20	990473	7/15/99	3/29/00		No	No	
21	990492	4/1/99	10/19/99		No	No	
22	990497	7/7/99	10/13/99	10/26/99	Yes		
23	990522	7/25/99	3/29/00		No	No	2
24	990535	7/26/99	3/29/00		No	No	1,2,11
25	990544	7/28/99	3/29/00	3/30/00	Yes		2,5,8
26	990591	8/4/99	10/19/99		No	No	

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No.	NMED #	Event Date	Initial Info. Request Date	Info. Received Date	Event Closed? As of 6/16/00	11/13/00	What Info* Requested?
27	990607	9/3/99	10/19/99		No	No	
28	990634	5/14/99	10/19/99	10/26/99	Yes		
29	990638	9/20/99	10/19/99		No	No	
30	990646	7/27/99	10/19/99	10/26/99	Yes		
31	990648	9/23/99	10/19/99	10/19/99	Yes		
32	990677	9/29/99	3/15/00		No	No	1,2
33	990713	2/2/99	11/11/99		No	No	
34	990714	2/23/99	11/11/99		No	No	
35	990716	1/31/99	11/11/99		No	No	
36	990718	2/19/99	11/11/99		No	No	
37	990742	10/18/99	11/11/99	11/17/99	Yes		
38	990759	10/19/99	3/14/00		No	No	2
39	990763	10/13/99	3/14/00	3/15/00	Yes		1,2,3,8
40	990787	10/25/99	3/14/00		No	No	2
41	990794	10/26/99	3/14/00		No	No	2
42	990809	4/15/99	12/8/99	12/10/99	Yes		3,5
43	990810	5/13/99	11/18/99		Yes		NA
44	990818	10/27/99	3/2/00	3/6/00	Yes		2
45	990836	3/28/99	12/8/99		No	No	2,4
46	990840	3/31/99	12/8/99		No	Yes	1
47	990842	11/1/99	12/8/99	3/8/00	Yes	Yes	1,2,4,11
48	990843	9/1/99	12/8/99	12/9/99	Yes	Yes	5,7
49	990851	11/8/99	12/22/99		No	No	1,2,8
50	990852	5/16/99	12/22/99		No	No	2,4,5,7,8
51	990853	4/8/99	12/22/99		No	No	3,8
52	990854	2/9/99	12/22/99		No	No	1,2,3,4,6,7,8
53	990871	11/10/99	3/2/99	3/29/99	Yes		2
54	990873	11/11/99	3/2/00	3/2/00	Yes		
55	990875	1/11/99	2/29/00		No	No	2,4

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No.	NMED #	Event Date	Initial Info. Request Date	Info. Received Date	Event Closed? As of 6/16/00	11/13/00	What Info* Requested?
56	990899	11/19/99	2/29/00	3/1/00	Yes		3,6
57	990904	11/23/99	2/29/00		No	No	2
58	990909	12/1/99	5/9/00	5/9/00	Yes		1,2
59	990911	11/25/99	1/25/00		No	No	2,3,4
60	990914	4/23/99	2/7/00	2/8/00	Yes		3,4
61	990915	4/26/99	2/7/00	2/8/00	Yes		2,3,4
62	990916	8/31/99	2/7/00	2/8/00	Yes		2,3,4,6,7
63	990917	9/1/99	2/7/00	2/8/00	Yes		1,2,4
64	990918	8/20/99	2/7/00	2/8/00	Yes		1,2,3,4
65	990921	12/3/99	5/9/00		Yes		1,2,3,5
66	990929	12/10/99	2/17/00	2/29/00	Yes		1,2,4,11
67	990933	12/9/99	5/9/00		No	Yes	1,2,3,6,11
68	990937	9/22/99	2/7/00	2/15/00	Yes		2,3,4
69	990972	9/24/99	3/15/00	3/16/00	No	No	2,3,4,6
70	000004	4/1/99	2/17/00	2/224/00	Yes		1,2
71	000006	12/20/99	2/17/00	2/17/00	Yes		1,2
72	000009	7/29/99	2/17/00	2/17/00	Yes		2
73	000019	12/30/99	3/7/00		No	No	2,8
74	000051	11/17/99	2/7/00		No	Yes	
75	000052	11/24/99	2/7/00		No	Yes	
76	000053	11/26/99	2/7/00		No	Yes	
77	000065	6/28/99	2/22/00	2/22/00	Yes		2,4
78	000074	11/19/99	2/17/00	2/25/00	Yes		1,2,5
79	000076	11/22/99	2/21/00		No	No	1,2,3,4,7
80	000080	11/2/99	2/21/00	2/22/00	Yes		2
81	000081	11/8/99	2/21/00	2/22/00	Yes		1,2,6
82	000082	11/5/99	2/21/00	2/21/00	No	No	2
83	000090	9/29/99	3/7/00		No	No	
84	000102	9/29/99	3/15/00	3/20/00	Yes		1,2

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No.	NMED #	Event Date	Initial Info. Request Date	Info. Received Date	Event Closed? As of 6/16/00	11/13/00	What Info* Requested?
85	000111	11/2/99	2/22/00		No	Yes	1,2,3,6,11
86	000114	10/25/99	2/22/00		No	No	1,2,3,4,7
87	000115	9/23/99	2/22/99		No	No	1,2,3,8
88	000116	10/5/99	2/22/00		No	No	1,2,6
89	000117	9/13/99	2/22/00		No	No	1,2,3
90	000118	7/1/99	2/22/00		No	No	1,2,6
91	000119	11/30/99	2/22/00		No	No	1,2,3,6
92	000120	12/9/99	5/9/00		No	No	1,2,6,11
93	000198	12/1/99	5/9/00		Yes		6,8

* The numbers in this column refer to the following information that is needed to complete the NMED record:

1. Cause of the event
2. Corrective actions
3. Source activity level
4. Equipment model number and serial number
5. Source model number and serial number
6. Isotope of concern
7. Manufacturer
8. License number
9. Licensee name
10. Licensee (City and State)
11. Others (contamination survey results, personnel exposure, disposal method, etc.)

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APPENDIX F – RANKING WORKING GROUP RECOMMENDATIONS

In the following table, the Working Group ranked each recommendation's contribution (high, medium or low) to each performance goal. This is a forced ranking, which means that under each goal, only one third of the recommendations can be high, only one third can be medium, and only one third can be low. For the final ranking, the safety goal governs. Any recommendation ranked high under the safety goal is automatically high in the final ranking. The final ranking could be revised only if the safety ranking was medium or low. The final ranking is a forced ranking also, so no more than one third of the recommendations are the same rank in the final column.

Table F-1 Ranking of Recommendations.

Recommendation	Maintain Safety	Increase Public Confidence	Reduce Unnecessary Regulatory Burden	Make NRC Activities and Decisions More Effective, Efficient and Realistic	Final Ranking
Task 1 – Comparison of NRC Strategic Plan and NRC Reporting Requirements					
1-1: Consider new strategic measure for significant exposures exceeding specific levels without reference to damage.	H 1	H* 1	M 1	H 1	**H 1**
1-2: Start using consequence field in NMED. Consider guidance to include consequence information in reports.	M 1	H* 2	L 1	M 1	**M 1**
1-3: Consider rulemaking to add reporting requirements to Parts 40 and 76 similar to Appendix A of Part 70.	M 2	H 3	L 2	M 2	**M 2**
1-4: Establish guidance for Agreement States on when and how independent medical consultants should be used to identify exposures resulting in permanent, functional damage.	L 1	L 1	L 3	L 1	**L 1**
1-5: For loss of control events, define “public domain” as including unrestricted areas and establish threshold for quantity of material.	L 2	M 1	M 2	L 2	**L 2**
1-6: Consider making accidental criticalities a strategic measure and loss of a criticality controls a performance measure.	H 2	H 4	M 3	M 3	**H 2**

* Revised ranking.

Recommendation	Maintain Safety	Increase Public Confidence	Reduce Unnecessary Regulatory Burden	Make NRC Activities and Decisions More Effective, Efficient and Realistic	Final Ranking
1-7: Revise performance measure to state "radiation and hazardous materials exposures" similar to strategic measure.	L 3	L 2	L 4	L 3	**L 3**
1-8: Consider establishing performance measures greater than zero. For chemical releases from milling and mining operations, measure the number of chemical releases that require mitigation of environmental impacts. If a significant increase in the number of releases is detected, actions can be taken to adjust performance before a release occurs that cannot be mitigated.	L 4	M 2	M 4	M 4	**L 4**
1-9: Consider recommendations in Appendix D and assign rulemaking actions to extend reporting times, clarify requirements, and reconsider need for reports of insignificant events.	H 3	H* 5	H 1	H 2	**H 3**
Task 2 – Licensee Guidance and Agreement State Guidance					
2-1: Develop consistent format and terminology in licensing guidance. Place event reporting guidance in an appendix.	H 4	H 6	H 2	H 3	**H 4**
2-2: In each part of 10 CFR, establish a reports subpart that contains or references every reporting requirement in the part.	H 5	H 7	H 3	M 5	**H 5**

* Revised ranking.

Recommendation	Maintain Safety	Increase Public Confidence	Reduce Unnecessary Regulatory Burden	Make NRC Activities and Decisions More Effective, Efficient and Realistic	Final Ranking
2-3: Create a web page for basic reporting requirement information with links to more detailed information. Withdraw NUREG-1460 from circulation.	H 6	H 8	H 4	M 6	**H 6**
Task 3 – Enhance NMED Reporting					
3-1: Establish goals and performance levels for completeness of NMED records.	M 3	M 3	L 5	M 7	**M 3**
3-2: The instructions in 10 CFR for the preparation of written reports should be revised as rulemaking takes place to specify that reports include root causes, equipment serial numbers, and other important pieces of information. The regulations should have consistent formats and terminology.	M 4	L* 3	H* 5	M 8	**M 4**
3-3: Staff should brief management periodically on the completeness of NMED records and recommend improvements.	M 5	M 4	M 5	M 9	**M 5**
3-4: Staff should monitor the number of licensees and the events reported for each Region and Agreement State, and periodically brief management on reporting rates.	M 6	M 5	L 6	L 4	**L* 5**

* Revised ranking.

Recommendation	Maintain Safety	Increase Public Confidence	Reduce Unnecessary Regulatory Burden	Make NRC Activities and Decisions More Effective, Efficient and Realistic	Final Ranking
Task 4a – Improve Understanding of Stakeholders					
4-1: Revise the reporting handbook for Agreement States (SA-300) to describe the performance goals and measures, and the reasons event reporting is a compatibility issue.	H 7	H* 9	L* 7	H 4	**H 7**
4-2: Allow Agreement States 48 hours to report significant events to NRC. Events with immediate safety issues should still be reported within 24 hours.	H 8	L 4	H 6	H 5	**H 8**
4-3: State efforts to assess trends and generic issues should be utilized whenever possible.	M 7	M 6	H 7	H 6	**M 6**
Task 4b – NMSS Generic Issue Program					
4-4: NMSS should make one IMNS manager responsible for weekly screening of generic issues (instead of panel).	L 5	L 5	M 6	H 7	**L 6**
4-5: Stop reviewing event reports for generic issues a few days after they are reported. Review event reports for generic issues 60 days after the report date.	M 8	L 6	H 8	H 8	**M 7**
4-6: NMSS should improve feedback to Regions and Agreement States with monthly e-mail on the RadRap system.	H 9	M 7	H 9	H 9	**H 9**

* Revised ranking.

Recommendation	Maintain Safety	Increase Public Confidence	Reduce Unnecessary Regulatory Burden	Make NRC Activities and Decisions More Effective, Efficient and Realistic	Final Ranking
4-7: NMSS should establish guidelines for appropriately addressing concerns about the adequacy of Regional and Agreement State event response actions.	M 9	M 8	M 7	H* 10	**M 8**
4-8: NMSS should announce issues of the NMED Quarterly Report, include the status of performance measures, and obtain the input of Agreement States on draft reports.	M 10	M 9	M 8	M 10	**M 9**
4-9: The staff should develop a fuel cycle section in the NMED Quarterly Report.	L* 6	M 10	L 8	L* 5	**L 7**
4-10: NMSS should improve the timeliness of the NMSS Licensee Newsletter.	H 10	H 10	H 10	L 6	**H 10**
Task 5 – Software Systems Review					
5-1: Establish procedures for confirming e-mail reports of significant events from Agreement States to NRC Operations Center.	H 11	L 7	M 9	M 11	**H 11**
5-2: The software for the MR and PN systems should be upgraded to Windows-based systems.	L 7	L 8	L 9	L 7	**L 8**
5-3: Add hyperlinks to reference documents in Internet version of NMED.	L 8	L 9	M 10	L 8	**L 9**

* Revised ranking.

Recommendation	Maintain Safety	Increase Public Confidence	Reduce Unnecessary Regulatory Burden	Make NRC Activities and Decisions More Effective, Efficient and Realistic	Final Ranking
5-4: NRC should delay posting Agreement State event reports on the Internet up to 48 hours if requested by the State. (Coordinate with Rec. 4-2)	L 9	L 10	H 11	L 9	**L 10**
5-5: Continue using separate tracking systems in NRC offices.	L 10	L 11	M 11	H* 11	**L 11**
5-6: Make NMED available to the public.	L 11	H 11	L 10	L 10	**M* 10**
5-7: NRC should provide significant events to the RADEV database being developed by IAEA.	M 11	M 11	L 11	L 11	**M 11**

* Revised ranking.