The Secretary of Energy
Washington, DC 20585
September 26, 2011

The Honorable Peter S. Winokur
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, DC 20004-2941

Dear Mr. Chairman:

Enclosed is the Department of Energy's Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 2010-1, *Safety Analysis Requirements for Defining Adequate Protection for the Public and the Workers*.

This Plan provides the Department's approach for updating its Documented Safety Analysis Standards and requirements to clarify them in regards to performance of hazard and accident analysis and the identification of safety controls.

I have assigned Dr. James B. O'Brien, Acting Director, Office of Nuclear Safety in the Office of Health, Safety and Security, as the Department's Responsible Manager for implementation of Recommendation 2010-1. He can be reached at (301) 903-1408.

Sincerely,

Steven Chu

Enclosure

U. S. Department of Energy

Implementation Plan
for
Defense Nuclear Facilities Safety Board
Recommendation 2010-1

Safety Analysis Requirements for Defining Adequate Protection for the Public and the Workers

Washington, DC 20585

September 2011

1.0 PURPOSE

The purpose of this Implementation Plan (IP) is to specify Department of Energy (DOE) actions for addressing Defense Nuclear Facilities Safety Board (Board or DNFSB) Recommendation 2010-1, *Safety Analysis Requirements for Defining Adequate Protection for the Public and the Workers*.

2.0 BACKGROUND

The Board issued Recommendation 2010-1 on October 29, 2010, which identified six specific sub-recommendations:

1. *Immediately affirm the requirement that unmitigated, bounding-type accident scenarios will be used at DOE's defense nuclear facilities to estimate dose consequences at the site boundary, and that a sufficient combination of SSCs [Structures, Systems and Components] must be designated safety class to prevent exposures at the site boundary from approaching 25 rem TEDE [Total Effective Dose Equivalent].*

2. *For those defense nuclear facilities that have not implemented compensatory measures sufficient to reduce exposures at the site boundary below 25 rem TEDE, direct the responsible program secretarial officer to develop a formal plan to meet this requirement within a reasonable timeframe.*

3. *Revise DOE Standard 3009-94 to identify clearly and unambiguously the requirement that must be met to demonstrate that an adequate level of protection for the public and workers is provided through a DSA [Documented Safety Analysis].*

4. *Amend 10 CFR Part 830 by incorporating the revised version of DOE Standard 3009-94 into the text as a requirement, instead of as a safe harbor cited in Table 2.*

5. *Formally establish the minimum criteria and requirements that govern Federal approval of the DSA, by revision of DOE Standard 1104-2009, and other appropriate documents.*

6. *Formally designate the responsible organization and identify the processes for performing oversight to ensure that the responsibilities identified in item 5 above are fully implemented.*

In his February 28, 2011, response to the Recommendation, the Secretary of Energy agreed with the intent of the Recommendation, but took exception to some of the

included technical details on how best to meet that intent. The Secretary of Energy's response constituted a partial acceptance of the Recommendation.

Per 42 United States Code (USC) Section 2286d paragraph (d), when the Secretary of Energy does not fully accept a Recommendation, the Board must either reaffirm or revise the recommendation. The Board reaffirmed the Recommendation in a letter to the Secretary of Energy on April 27, 2011. In the letter, the Board provided clarifications for each sub-recommendation and additional explanations for those aspects of the Recommendation that were addressed by DOE in its February 28, 2011 response.

In a letter dated May 27, 2011, the Secretary of Energy reaffirmed his February 28, 2011, response as his final decision. The Secretary of Energy agreed that the clarifications provided by the Board will help guide our work in developing an Implementation Plan that satisfies DOE's and the Board's mutual objectives of ensuring that DOE requirements are clear and provide adequate protection of the public, workers, and the environment. For example, the Board noted the importance of safety class controls (e.g., structures, systems, and components (SSCs)), implying flexibility in considering other forms of controls (e.g., specific administrative controls). Further, the Board clarified that the recommendation did not require that the Department use quantitative risk assessment to make determinations of what constitutes adequate protection for the public.

On June 28, 2011, DOE's final decision was published in the Federal Register (FR) and included amplification on the Secretary of Energy's rationale for his decision. In particular the Secretary stated that DOE agreed with the importance of the use of the 25 rem Evaluation Guideline in determining safety controls that provide adequate protection of the public. The Secretary also wrote that DOE has appropriately applied this approach in the safety analyses for the overwhelming majority of its nuclear facilities. For the few existing facilities where existing safety controls could not mitigate the dose below the 25 rem guideline in some accident scenarios, the Secretary stated that DOE has implemented necessary compensatory measures and will continue to strengthen both those actions and take any additional measures necessary to provide adequate public protection. Further, the Secretary confirmed continuation of the policy that the 25 rem Evaluation Guideline will be met for all new facilities.

3.0 UNDERLYING CAUSES

DOE's evaluation of this issue found that the underlying cause was a lack of clarity in the manner in which DOE managed DSA approval where controls to prevent or mitigate dose to the hypothetical maximally exposed offsite individual to less than the 25 rem Evaluation Guideline are not feasible or are extremely costly. A major contributor to this was the lack of clarity in DOE Standard 3009, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analyses,* regarding (1) whether safety class controls must be iteratively applied until the accident is prevented or the consequence is mitigated to less than the Evaluation Guideline for existing facilities, and (2) whether DOE Standard 3009 allows for other options when this may not be feasible or may be extremely costly.

In addition, DOE requirements documents did not include criteria on the process by which adequacy of safety is ensured for facilities that cannot mitigate maximally exposed offsite individual doses below the Evaluation Guideline and did not include clear direction on how some elements of hazard and accident analysis were to be performed. Furthermore, the DOE DSA review standard (DOE Standard 1104, *Review and Approval of Nuclear Facility Safety Basis and Safety Design Basis Documents*) did not provide guidance on the process for review of DSAs where the accident dose could not be mitigated below the Evaluation Guideline (including the appropriate level of authority for approving the DSA, compensatory measures and planned improvements when this situation arises). Finally, the Department's delegation of safety authority procedure did not place limits on authority to delegate safety basis approval authority in situations where mitigated design basis accident scenarios exceed the Evaluation Guideline.

4.0 BASELINE ASSUMPTIONS

The key baseline assumptions associated with this Implementation Plan are as follows:

- Implementation actions will be consistent with the Secretary's May 27, 2011, letter (which stated that the clarifications provided in the Board's reaffirmation letter will be useful in developing this Implementation Plan).

- Ongoing work on revisions to DOE-STD-3009 will serve as the starting point for addressing the DNFSB 2010-1 Recommendation, but may need to be expanded to ensure it addresses all of the areas committed to in the Secretary's February 28, 2011 letter.

- Although the existing DOE nuclear safety basis regulatory framework (where specific DSA Standards are required to be utilized unless otherwise approved by DOE) has been effective, this framework will be re-examined to determine if it is optimal and provides for appropriate enforceability of the Standards criteria.

- Where the recommendation and the Secretarial response referred to the analysis of accidents, the term 'accidents' meant Design Basis Accidents (DBAs) (for new facilities) or Evaluation Basis Accidents (for existing facilities). These are henceforth simply referred to as DBAs.

5.0 NEAR-TERM ACTIONS AND RELATED ACTIVITES

The primary action in support of this recommendation is to revise DOE technical standards and other directives related to DSA development, review, and approval to provide greater clarification. DOE has already implemented a program and schedule to revise nuclear safety Directives, including its technical standards, and will continue this effort in support of this recommendation. The revision of DOE Standard 3009 began in January 2011 and DOE has held three workshops to support its development.

In the event that the subject standards are not published within nine months of the issuance of this IP, the Department will consider establishing interim evaluation criteria that can be used as part of its review and approval process for those DSAs where potential mitigated DBA doses exceed the Evaluation Guideline. Recognizing the importance of maintaining adequate protection, appropriate levels of authority for approving these potential cases will be incorporated into the interim criteria.

The remaining activities and milestones are discussed in Section 6. The current set of Directives has served the Department well in ensuring that appropriate safety decisions have been made relative to design and operation of its nuclear facilities. However, the Department recognizes that these Directives should be clarified, particularly with respect to application of the Evaluation Guideline. The plans for preparing revisions to these Directives are outlined in Section 6, below.

As an interim measure, until such time as the revisions to directives in this Implementation Plan are completed regarding updated accident analyses requirements and approval authorities, the role of the Central Technical Authorities will be expanded. If a new situation is identified in which a mitigated DBA exceeds the Evaluation Guideline (a situation not previously evaluated by the Department), Central Technical Authority concurrence will be required prior to approval of the associated Safety Evaluation Report. The associated Chief of Nuclear Safety or Chief of Defense Nuclear Safety will review the Safety Evaluation Report and provide a recommendation to the responsible Central Technical Authority. This requirement will be established by a joint memorandum from the Central Technical Authorities to Safety Basis Approval Authorities through the Program Secretarial Officers. In addition, the Chief of Nuclear Safety or Chief of Defense Nuclear Safety will present the results of his or her review to DOE's Nuclear Safety and Security Council and obtain their advice prior to providing a recommendation to the responsible Central Technical Authority. The Council will also provide advice to the Deputy Secretary, as appropriate, regarding the actions being taken to ensure safety at the facility.

6.0 ISSUE RESOLUTION

DOE believes its existing nuclear safety regulatory framework, utilizing the DOE Standard 3009, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analyses*, as a safe harbor methodology for non-reactor and non-transportation Hazard Category 1, 2 and 3 facilities, can continue to be used to effectively implement the 10 CFR Part 830 safety basis requirements. As stated above, DOE is in the process of revising, Standard 3009 and its associated safety analysis review Standard (DOE Standard 1104, *Review and Approval of Nuclear Facility Safety Basis and Safety Design Basis Documents)* to ensure the Standards clearly describe how the Evaluation Guideline is to be applied for designating safety controls and the process that will be followed when mitigated dose cannot be reduced to less than the Evaluation Guideline.

DOE will strengthen its review criteria and approval process for those rare instances where the consequences of postulated DBAs cannot be eliminated or mitigated below the Evaluation Guideline for existing facilities where significant safety upgrades are impractical. This process will include designation of appropriate senior management levels of approval authority when consequences cannot be reduced below the guideline.

Where appropriate, the actions discussed below are cross-walked to the specific sub-recommendations sections they intend to address.

6.1 Evaluation and Update of DSA Development Standards (DOE Standards 3009, 1120, 3011, and 1189)

DOE will evaluate and update its Standards that provide criteria and guidance for the development of DSAs including:

- DOE Standard 3009, *Preparation Guide for U.S. Department of Energy Nonreactor* Nuclear *Facility Documented Safety Analyses*

- DOE Standard 1120, *Integration of Environment, Safety, and Health into Facility* Disposition *Activities*

- DOE Standard 3011, *Guidance for Preparation of Basis for Interim Operation (BIO) Documents*

- DOE Standard 1189-2008, *Integration of Safety Into The Design Process*

The first Standard to be updated will be DOE Standard 3009, since it is used for the development and maintenance of DSAs at the majority of DOE's Hazard Category 2 and 3 nuclear facilities. DOE Standard 1120, 3011 and 1189 will then be updated to be consistent with DOE Standard 3009.

The update to these Standards will be consistent with the Secretary of Energy's response to the Board Recommendation 2010-1 and will be guided by the clarifications provided in the Board's April 27, 2011, letter to address:

- The usage of unmitigated, bounding-type accident scenarios to estimate doses to the maximally exposed offsite individual (1st Part of Sub-Recommendation 1[1]).

- The usage of the Evaluation Guideline as it applies to new and existing facilities (2nd Part of Sub-Recommendation 1).

[1] References in parentheses are to the sub-recommendations in Recommendation 2010-1. In many cases the action being committed to does not exactly match the language in Recommendation 2010-1 but reflects the manner in which DOE is implementing the sub-recommendation, consistent with the clarifications provided in the Board's April 27, 2011, letter.

- The process for determining hazard controls to prevent the maximally exposed offsite individual from exceeding the Evaluation Guideline and, for any SSCs that are utilized as controls, the process for designating those SSCs as safety class. (2nd Part of Sub-Recommendation 1).

The update to each of these Standards will clearly and unambiguously identify the requirements that must be met to fully implement the DSA development methodology. In particular they will identify the requirements for:

- Methodologies that must be used in preparation of a DSA, including criteria for input data, accident analysis parameters, and analytical tools used as part of the process. Sub-Recommendation 3.a).

- Criteria that must be met for identifying and analyzing an adequate set of DBAs (for new facilities), or Evaluation Basis Accidents (for existing facilities) (Sub-Recommendation 3.b).

- Criteria for performing mitigated dose consequence analyses to determine the effectiveness of safety-class SSCs to reduce dose consequences to below the Evaluation Guideline (Sub-Recommendation 3.c).

- Criteria for evaluating the adequacy of the control set to perform its safety related function.

- Actions that must be taken if the consequence cannot be mitigated below the Evaluation Guideline. These actions will include the submission to the approval and concurrence authorities (see next section) of a formally documented analysis providing the likelihood and expected dose to the maximally exposed offsite individual (in addition to the bounding values used for control classification), a description of compensatory measures that are warranted, and an assessment of the effectiveness of compensatory measures, and planned improvements. (Sub-Recommendation 3.d).

As part of this effort, the current draft revision to DOE Standard 3009 will be evaluated in areas of hazard assessments, accident analysis, and hazard control identification to identify where further improvements are warranted to ensure consistent and predictable implementation of these processes (including use of appropriate input parameters and analysis methods). As part of this evaluation, a determination will be made of whether any identified improvements should be made in the current draft revision to DOE Standard 3009, a Code guidance document, or a future revision to DOE Standard 3009 (or a new DOE Standard). This determination will be based on the best fit for the new criteria or guidance and the time needed to develop the new criteria or guidance relative to the priority for completing current improvements to DOE Standard 3009.

The DOE Standard 3009 revision and revisions of other 'safe harbor' methodologies will be reviewed by DOE's Nuclear Safety and Security Council

to ensure they appropriately address the commitments in the Secretary's response to DNFSB Recommendation 2010-1 prior to entering RevCom.

Key milestones are captured in the commitments below.

Milestone 6.1.1 Update DOE Standard 3009

Lead Responsible Organization: Office of Health, Safety and Security

Product: Report on additional areas of improvements to safety analysis preparation standards or guidance documents and plans for implementing them.

Due Date: October 31, 2011

Milestone 6.1.2 Update DOE Standard 3009

Lead Responsible Organization: Office of Health, Safety and Security

Product: Draft Standard into RevCom for Complex-wide and DNFSB review

Due Date: November 30, 2011

Deliverable: Final Standard Issued

Due Date: 4 months after submittal into RevCom (target date March 31, 2012)

Milestone 6.1.3 Update DOE Standard 1120, DOE Standard 3011, and DOE Standard 1189

Lead Responsible Organization: Office of Health, Safety and Security

Product: Draft Standards into RevCom for Complex-wide and DNFSB review

Due Date: 5 months after issuance of DOE Standard 3009 (target date August 31, 2012)

Deliverable: Final Standards Issued

Due Date: 5 months after submittal of DOE Standard 1120, 3011, and 1189 into RevCom (target dated January 30, 2013)

6.2 Review of DSAs

Once the revised DOE Standards 3009 and 1104 are issued, DOE will evaluate the DSAs for all defense nuclear facilities as part of the required periodic update process. This evaluation will be prioritized such that the small number of defense nuclear facilities where mitigated doses exceed the 25 rem Evaluation Guideline for one or more of their DBAs, are evaluated utilizing the new standards as soon as practicable, with the expectation that the evaluations will be performed at the first annual update initiated six months after issuing the revision to the standard on which the safety analysis is based. This timeframe is necessary to allow for the training of contractor personnel on the changes to the Standard, and to allow time to update the safety analysis using the new standard, as well as time to train the review and approval personnel on the new approval requirements. The evaluations will focus on implementation of changes to the standards in regards to the accident analysis and identification of hazard controls, in particular as related to situations where controls have not been identified that mitigate offsite doses from DBAs to below 25 rem. The approved updated DSAs and associated Safety Evaluation Reports, developed and approved in accordance with the revised standards and directives, will constitute the documentation of this evaluation.

The evaluation of the DSAs relative to the new standards at the remaining defense nuclear facilities will be performed consistent with the current regulatory process established for developing and maintaining DSA updates (as modified by changes made as part of implementing Section 6.5 of this Implementation Plan).

Milestone 6.2.1 Review of DSAs for Facilities with Mitigated Doses Above the Evaluation Guideline

Lead Responsible Organization: Respective Program Offices and responsible Central Technical Authorities

Deliverable: Safety Evaluation Reports for DSAs (and any updates to the DSAs) for those facilities with mitigated doses above the Evaluation Guide.

Due Date: The first annual DSA update initiated six months after issuing the revision to the standard on which the safety analysis is based (Expected before December 2013). Safety Evaluation Reports would follow roughly 3 months later, March 2014.

6.3 Update of DSA Review Requirements and Review Standard (DOE Standard 1104)

DOE will update DOE Standard 1104 and appropriate delegation of authority directives to refine the requirements and standards that govern federal approval of a DSA including:

- The required training and qualification of the approval authority, the authorities that can be delegated, and the exceptions and limitation of the approval authority's responsibilities (Sub-Recommendation 5.a).

- Actions to be taken if conditions are beyond the delegated approval authority's specified boundaries or limitations (Sub-Recommendation 5.b)

- The organization or the individual who can approve a DSA that is beyond the delegated approval authority's specified boundaries or limitations (Sub-Recommendation 5.c)

- The process that must be followed if conditions are beyond the delegated approval authority's specified exceptions or limitations, and any compensatory actions to be taken (Sub-Recommendation 5.d)

- The approval process and criteria for those instances where the consequences of postulated DBAs are not eliminated or mitigated below the Evaluation Guideline (Sub-Recommendation 5.e). Criteria that will be considered for inclusion in DOE Standard 1104 as part of its development include:

    - The remaining lifetime of the facility
    - The extent to which the mitigated dose exceeds the Evaluation Guideline
    - The likelihood of the accident that has mitigated doses exceeding the Evaluation Guideline
    - Control strategy options
    - Plans and schedule for compensatory measures and improvements

DOE will also evaluate the manner in which DOE Standard 1104 is invoked via its Directives and/or regulatory requirements (i.e., 10 CFR Part 830) and develop new requirements as needed. DOE will also assess the requirements for approving DSAs in those instances where the consequences of postulated DBAs are not prevented or mitigated below the Evaluation Guideline. This assessment will be implemented through the review of the regulatory framework described in Section 6.5 below.

Key milestones are captured in the commitments below.

Milestone 6.3.1 Update DOE Standard 1104

Lead Responsible Organization: Office of Health, Safety and Security

Product: Draft Standard into RevCom for Complex-wide (and DNFSB review)

Due Date: 1 month after DOE Standard 3009 goes into RevCom (target date December 31, 2011)

Deliverable: Final Standard Issued

Due Date: 1 month after DOE Standard 3009 is issued (target date April 30, 2012)

6.4 Update of Independent Oversight Protocols

The responsible organization for performing independent oversight for the Secretary is the Office of Enforcement and Oversight, within the Office of Health, Safety and Security (HSS). HSS Independent Oversight will establish a Criteria Review and Approach Document and perform assessments of nuclear safety delegations that review the proper implementation of revisions made to delegations for documented safety analysis approvals (including training and qualifications of approval authorities). (Sub-recommendation 6)

Milestone 6.4.1 Update Independent Oversight Protocols

Lead Responsible Organization: Office of Health, Safety and Security

Product: Draft Oversight Protocols (including Criteria Review and Approach Document)

Due Date: 1 month after DOE Standard 1104 is issued (target date: May 31, 2012)

Deliverable: Final Protocols Issued

Due Date: 2 months after Draft Protocols Issued (target date July 31, 2012)

6.5 Establish Regulatory Framework for Ensuring Appropriate Implementation of Safety Analysis and Hazard Control Requirements

DOE will evaluate its regulatory framework (and modify as needed) to ensure that essential elements of the safety analysis and hazard control identification are performed during the development of facility DSAs. The options that will be considered include:

- Continuing with the current safe harbor approach with clarification on the need for incorporation of revisions to standards identified as a safe harbor.
- Direct incorporation of the Standard revision citation into the body of 10 CFR Part 830
- Direct incorporation of key criteria from the Standard into the body of 10 CFR Part 830 with the remainder of the Standard being either included as a safe harbor or as a non-mandatory standard.

DOE will develop a technical paper that analyzes these options and provide it to the Nuclear Safety and Security Council for its evaluation and recommendation and then to senior DOE leadership for any recommended actions. As discussed in Section 6.3, DOE will also evaluate its regulatory framework for review of DSAs and determine whether a new requirement in 10 CFR Part 830 or in a DOE Directive (such as DOE Integrated Safety Management Order) to require use of DOE Standard 1104 for the review of DSAs, and to set limits on the delegation of authority to approve DSAs in certain circumstances is needed. The analysis of regulatory options will also address the process for review of existing DSAs to new DSA development criteria in DOE Standards including backfit considerations (including need for development of backfit requirements, standards, or criteria).

Milestone 6.5.1 Analysis of Regulatory Options

Lead Responsible Organization: Office of Health, Safety and Security

Product: Technical Paper on Regulatory Options

Due Date: January 31, 2012

Deliverable: Decision on Regulatory Options

Due Date: 2 months after Technical Paper is issued (target date March 31, 2012)

Milestone 6.5.2 Update of 10 Part CFR 830 (only needed if determined to be necessary as part of completion of analysis in Milestone 6.5.1)

Lead Responsible Organization: Office of Health, Safety and Security

Product: 10 CFR Part 830 Proposed Revision into Federal Register (FR) for Notice and Comment

Due Date: 9 months after DOE Standard 3009 is issued (target date December 31, 2012)

Deliverable: 10 CFR Part 830 Revision Issued

Due Date: 6 months after put into FR for Notice and Comment (target date May 31, 2013)

Milestone 6.5.3 Develop a DOE Directive requirement to invoke DOE Standard 1104 (only needed if determined to be necessary as part of completion of analysis in Milestone 6.5.1)

Lead Responsible Organization: Office of Health, Safety and Security

Product: Draft DOE Directive requirement development

Due Date: 2 months after DOE Standard 1104 is issued (target date June 30, 2012)

Deliverable: DOE Directive requirement issuance

Due Date: 3 months after draft Directive put into RevCom (target date September 30, 2012)

6.6 Interim measure for Central Technical Authorities

Until such time as the revisions to directives in this Implementation Plan are completed regarding updated accident analyses requirements and approval authorities, the role of the Central Technical Authorities will be expanded as an interim, compensatory measure.

If a new situation is identified in which a mitigated DBA exceeds the Evaluation Guideline (a situation not previously evaluated by the Department), Central Technical Authority concurrence will be required prior to approval of the associated Safety Evaluation Report. The associated Chief of Nuclear Safety (or Chief of Defense Nuclear Safety) will review the Safety Evaluation Report and provide a recommendation to the responsible Central Technical Authority. This requirement will be established by a joint memorandum from the Central Technical Authorities to Safety Basis Approval Authorities through the Program Secretarial Officers. In addition, the Chief of Nuclear Safety or Chief of Defense Nuclear Safety will present the results of his or her review to the Nuclear Safety and Security Council and obtain their advice prior to providing a recommendation to the responsible Central Technical Authority. The Council will also provide advice to the Deputy Secretary, as appropriate, regarding the actions being taken to ensure safety at the facility.

Milestone 6.6.1 Central Technical Authorities Joint Memorandum

Lead Responsible Organization: NNSA Chief of Defense Nuclear Safety

Deliverable: Joint memorandum from the Central Technical Authorities

Due Date: A month after the Implementation Plan is approved (target date: October 31, 2011)

7.0 SUMMARY

The Department believes that these actions are appropriate for implementing the overall intent of DNFSB Recommendation 2010-1 in a measured and prudent fashion and will achieve the overall objective of ensuring DOE Standards for DSA preparation and review provide clear and appropriate criteria for meeting 10 CFR Part 830 requirements

8.0 ORGANIZATION AND MANAGEMENT

Overall execution of this IP is the responsibility of the Acting Director of the Office of Nuclear Safety, who is assigned as Responsible Manager. The Nuclear Safety Technical Experts Committee (which includes representatives from Offices of HSS; Environmental Management; Nuclear Energy; and Science; and the National Nuclear Security Administration, as well as representatives from the Chief of Defense Nuclear Safety and Chief of Nuclear Safety), will support development of the technical products committed to in the Plan. This Committee will be supported by Federal staff and contractors from DOE Sites and National Laboratories. Responsibility for implementation of the changes in requirements for safety analysis and hazard control identification will reside with the Program Offices.

DOE will engage the DNFSB staff during the development of the products and deliverables identified in this Implementation Plan to allow for DNFSB staff input. In addition, to ensure the various Department implementing elements and the Board remain informed of the status of Plan implementation, the Department will provide progress reports to the Board and/or Board staff approximately every four months.

Table – Summary of Products/Deliverables

No.	Milestones/Commitment	Product/Deliverable	Anticipated Delivery Date
6.1.1	Evaluation of improvements to DOE Standard 3009	Product – Report on Improvements	October 31, 2011
6.1.2	Update DOE Standard 3009	Product – Draft Standard into RevCom Deliverable – Final Standard Issued	November 30, 2011 March 31, 2012
6.1.3	Update DOE Standard 1120, DOE Standard 3011, and DOE Standard 1189	Product – Draft Standard into RevCom Deliverable – Final Standard Issued	August 31, 2012 January 31, 2013
6.2.1	Review of DSAs for Facilities with Mitigated Doses Above the Evaluation Guideline	Deliverable – Report on evaluation of DSAs	See [1]
6.3.1	Update DOE Standard 1104	Product – Draft Standard into RevCom Deliverable – Final Standard Issued	December 31, 2011 April 30, 2012
6.4.1	Update Independent Oversight Protocols	Product – Draft Protocol Deliverable – Final Protocol	May 31, 2012 July 31, 2012
6.5.1	Analysis of Regulatory Options	Product – Technical Paper on Regulatory Options Deliverable – Decision on Regulatory Options	January 31, 2012 March 31, 2012
6.5.2	Update of 10 CFR 830	Product – 10 CFR 830 Revision into FR Deliverable – 10 CFR 830 Revision Issued	December 31, 2012 May 31, 2013
6.5.3	DOE Directive requirement to invoke	Product Draft DOE Directive requirement development	June 30, 2012

[1] By next DSA update following issuance of DOE STDs 3009 and 1104, but no later than December 2013

No.	Milestones/Commitment	Product/Deliverable	Anticipated Delivery Date
	Standard 1104	Deliverable DOE Directive requirement issuance	September 30, 2012
6.6.1	Central Technical Authority Memorandum	Deliverable – Signed memorandum	October 31, 2011