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The Annual Assessment Reporting Process

Background

On 11 August 1995, President Clinton announced that the United States intended to enter negotiations on the Comprehensive Test Ban Treaty. To address concerns that the cessation of nuclear testing would introduce uncertainty about the efficacy of the U.S. nuclear deterrent, he also announced the concurrent establishment of six Safeguards as conditions of entry. Safeguard A prescribed “*... a Science Based Stockpile Stewardship program to ensure a high level of confidence in the safety and reliability of nuclear weapons in the active stockpile.*” Safeguard B required “*The maintenance of modern nuclear laboratory facilities and programs in theoretical and exploratory nuclear technology which will attract, retain, and ensure . . . human scientific resources.*” These two Safeguards led to the establishment of the physical and intellectual capabilities to sustain the Nation’s nuclear deterrent without nuclear testing.

Safeguard F reserved the right of the United States to withdraw from the treaty. It stated that the president, in consultation with Congress, would be prepared to withdraw from the CTBT under the standard “supreme national interests” clause in order to conduct nuclear testing if “*informed by the Secretary of Defense and the Secretary of Energy (DOE) -- advised by the Nuclear Weapons Council, the Directors of DOE's nuclear weapons laboratories and the Commander of the U.S. Strategic Command -- that a high level of confidence in the safety or reliability of a nuclear weapon type which the two Secretaries consider to be critical to our nuclear deterrent could no longer be certified.*

In the same statement that contained the Safeguards, President Clinton said, “*I am today directing the establishment of a new annual reporting and certification requirement that will ensure our nuclear weapons remain safe and reliable under a comprehensive test ban.*” This was the birth of the annual assessment reporting process.

To provide an initial framework process for reporting on the safety, reliability and yield of each warhead/bomb in the stockpile, the Nuclear Weapons Council Standing and Safety Committee (NWCSSC)¹ issued memorandum *Annual Stockpile Certification* dated 11 June 1996. The Nuclear Weapons Council² subsequently issued memorandum *Annual Certification Tasking Letter* dated 11 March 1997, which provided an updated process. The details specified in these two memoranda

¹ The Nuclear Weapons Council Standing and Safety Committee is a subordinate organization of the Nuclear Weapons Council with the primary mission to advise and assist the Nuclear Weapons Council and to provide preliminary approval for its decisions.

² The Nuclear Weapons Council is a joint Department of Defense/Department of Energy organization established by the Congress in 1987 to facilitate high-level cooperation and coordination between the two departments as they fulfill their dual responsibilities for securing, maintaining and sustaining the U.S. nuclear weapons stockpile.

evolved and changed rapidly over the next five years as the stakeholder organizations identified and implemented more efficient and comprehensive procedures.

Statutory Basis

The Fiscal Year 2003 (FY03) National Defense Authorization Act (NDAA), codified in 50 United States Code 2525 (50 USC 2525), provided specific statutory requirements and guidance for the annual assessment reporting process. The statute requires the Directors of the Los Alamos National Laboratory (LANL), Lawrence Livermore National Laboratory (LLNL) and Sandia National Laboratories (SNL) to accomplish the following three major elements annually:

- complete an assessment of the safety, reliability and performance of each nuclear weapon type;
- use a Red Team to review and challenge the assessments; and
- submit a report on the assessments to the Secretary of Energy, Secretary of Defense and the Nuclear Weapons Council.

The FY10 NDAA authorized the National Nuclear Security Agency (NNSA) Administrator³ to establish 'dual validation teams' (subsequently named Independent Nuclear Weapons Assessment Teams [INWATs]) at each Laboratory to independently assess the warheads/bombs that were the responsibility of the other Laboratories.

The FY14 NDAA added a requirement to summarize in the Director's annual report the significant finding investigations⁴ that were open or closed during the period of time covered by the Director's report.

Los Alamos National Laboratory Annual Assessment Products

Annual Assessment Reports

LANL and SNL jointly develop and issue annual assessment reports on each warhead/bomb for which they are responsible. These reports do not contain original information, and no calculations or experiments are performed uniquely for these reports. Rather, the reports summarize the current assessment of warhead/bomb safety, reliability and performance against the requirements defined by

³ In 2000, Congress established the National Nuclear Security Administration as a semi-autonomous agency within the Department of Energy. The NNSA exercises Federal oversight and management of the U.S. nuclear weapons program on behalf of the Secretary of Energy.

⁴ Significant finding investigations document birth defect, design intent or aging anomalies that have the potential to affect safety, security, reliability or performance. The resolution process includes determining the cause; ascertaining impacts on weapon system safety, reliability and performance; and recommending corrective actions, if applicable.

the Military Characteristics⁵ and the Stockpile-to-Target Sequence⁶ documents. The reports also contain a statement regarding the need for nuclear testing to maintain certification of the warhead/bomb.

The annual reports contain technical data provided by the stockpile evaluation program (surveillance cycle reports, significant finding investigations and flight tests), reliability reports, baselining, any current certification activities and the original system certification. The reports summarize the results of recent supporting computational and experimental activities, present the results of safety studies and describe progress on resolving component or material issues, if not addressed by surveillance. The reports also cite any system changes or changes in certification (component replacement, introduction of modifications or alterations, exceptions to the Military Characteristics or Stockpile-to-Target Sequence requirements).

LANL warhead program managers draft and update the reports in coordination with their SNL counterparts. There are three major drafts before publication, each draft subject to review, comment and update by subject matter experts. LANL Group Leaders and Program Managers with assessment responsibilities review Revision LAB issued in mid-March. NNSA, LLNL, SNL, LANL Associate Laboratory Directors and warhead/bomb Project Officers Groups (POGs)⁷ review Revision POG issued in late April. LANL Deputy Directors review Revision Final Draft issue in early July. The Director or Deputy Director for Weapons co-signs a cover letter with the SNL counterpart that transmits the official final report in late July. NNSA, LANL, LLNL and SNL collaboratively manage the distribution of the reports. Recipients include Department of Defense, NNSA and Laboratory personnel.

The annual assessment reporting process does not involve inter-laboratory peer review, *per se*, but the annual reports do summarize the results of any inter-laboratory peer reviews that have occurred during the previous year.

Director's Red Team

The Director formally charters the LANL Director's Red Team (DRT) in February. Its membership includes nuclear weapons experts from LANL, SNL and LLNL. The DRT reviews drafts of the annual assessment reports, interviews weapons program managers and staff and participates in briefings to

⁵ The Military Characteristics document contains the high-level requirements for safety, reliability, performance and operability specified by the Department of Defense for each warhead/bomb type.

⁶ The Stockpile-to-Target Sequence document contains the environments specified by the Department of Defense in which each warhead/bomb type must survive.

⁷ A Project Officers Group is a joint Department of Defense-NNSA group associated with a particular warhead/bomb type. A Project Officers Group is responsible for development and management of its warhead/bomb and ensuring compatibility with its designated delivery system(s). The Project Officers Group remains active throughout the lifetime of its warhead/bomb.

the Director. The DRT presents its conclusions and recommendations to weapon program managers and the Director and submits a written report detailing the results in August.

Independent Nuclear Weapons Assessment Process

The LANL-LLNL Independent Nuclear Weapons Assessment Process focuses on assessments of nuclear performance. Assessments of other topical areas such as materials, chemistry, metallurgy and engineering performance may also be conducted.

Four LLNL INWATs assess LANL nuclear weapons: the B61 bomb and the W76, W78 and W88 warheads. Each INWAT provides a preliminary report of its assessment to the applicable LANL technical staff in April and to the LANL Deputy Director for Weapons in July. Each INWAT briefs its assessment to the LANL Director in August, followed by written reports in December.

The Director's Annual Assessment Letter

A number of activities throughout the assessment cycle provide the information that the Director needs to develop the annual assessment letter:

- reviews of the annual assessment reports;
- targeted technical reviews requested by the Director;
- technical briefings by the warhead/bomb program managers;
- programmatic briefings by the Weapons Program Division Leaders;
- a technical and programmatic briefing by the DRT; and
- technical briefings by the LLNL B61, W76, W78 and W88 INWATs.

50 USC 2525 specifies a number of required topics that the letter must include:

- a determination of the need for nuclear testing to resolve issues;
- a determination of nuclear tests that, while not necessary, might have value;
- a determination of the readiness of the United States to conduct nuclear testing;
- a statement regarding the adequacy of the science-based tools and methods;
- a statement regarding the adequacy of the tools and methods employed by the manufacturing infrastructure;
- a summary of the findings and recommendations of the DRT and the LLNL INWATs; and
- a summary of any significant finding investigations initiated or active during the previous year.

Although not required by law, the Director typically includes discussions of the status of the surveillance program and other programmatic activities that provide additional insight to the recipients of the letter.

The Director signs the annual assessment letter no later than 30 September. The required recipients of the letter are the Secretary of Energy, the Secretary of Defense and the Chair of the Nuclear Weapons Council. NNSA, LANL, LLNL and SNL collaboratively manage additional distribution.

U.S. Strategic Command Annual Assessment Products

The Commander, U.S. Strategic Command, Annual Assessment Letter

The Strategic Advisory Group⁸ Stockpile Assessment Team⁹, a group of knowledgeable retired civilian and military nuclear weapons experts, provides the information that the Commander needs to develop the annual assessment letter.

U.S. Strategic Command (USSTRATCOM) conducts an annual Stockpile Assessment Meeting in June of each year and summarizes its findings in a report to the Commander. Representatives of the Department of Defense, the U.S. Navy, the U.S. Air Force, the nuclear weapons Laboratories, the POGs and the NNSA present briefings at the Stockpile Assessment Meeting. Additional participants include NWCSSC members and representatives of other stakeholder organizations.

50 USC 2525 provides specific requirements for the content of the annual assessment letter from the Commander, USSTRATCOM.

- a determination of the need for nuclear testing to resolve issues;
- a determination of nuclear tests that, while not necessary, might have value;
- a determination of the readiness of the United States to conduct nuclear testing;
- a discussion of the relative merits of other nuclear weapon types, or compensatory measures that could be taken to enable accomplishment of the missions of the nuclear weapon types to which the assessments relate, if required;
- a summary of all major assembly releases in place as of the date of the report for the active and inactive nuclear weapon stockpiles; and
- the views of the Commander on the Stockpile Responsiveness Program.

The Commander signs the annual assessment letter no later than 01 December. The required recipients of the letter are the Secretary of Defense and the Chair of the Nuclear Weapons Council.

⁸ The Strategic Advisory Group provides independent advice and recommendations to the Commander, U.S. Strategic Command, on scientific, technical, intelligence and policy-related topics affecting the development and maintenance of the national nuclear war plan

⁹ The Stockpile Assessment Team provides technical advice and recommendations to the Commander, U.S. Strategic Command concerning its assessment of the safety, reliability and performance of the U.S. nuclear deterrent and other related topics as directed by the Commander.

Role of the National Nuclear Security Administration

The Office of Defense Programs within the NNSA participates in the annual assessment reporting process in a number of ways.

The NNSA Deputy Administrator for Defense Programs (NA-10) issues a tasking letter and Execution Plan to the Director in January. The tasking letter specifies the minimum content required in each annual assessment report. The Execution Plan is a detailed roadmap that provides deliverables, due dates, responsibilities, reference materials and coordination details.

The NNSA participates in the Stockpile Assessment Meeting, presenting briefings on issues pertaining to the overall direction of the Stockpile Stewardship Program¹⁰ or issues pertaining to the nuclear weapons complex. NNSA personnel also assist in the development of the Secretary of Energy/Secretary of Defense report to the President.

Role of the Nuclear Weapons Council and the Nuclear Weapons Standing and Safety Committee

Using the annual assessment reports and the annual assessment letters from the Laboratory Directors and the Commander, USSTRATCOM, the NWCSSC coordinates the development of a report from the Secretary of Energy and the Secretary of Defense to the President. This report provides any comment or conclusion from either Secretary concerning the content of the annual assessment letters and the safety, reliability, performance and military effectiveness of the nuclear weapons stockpile.

The Nuclear Weapons Council reviews and approves the draft report, coordinates obtaining the signatures of the Secretaries and sends the report, with the annual assessment letters attached, to the President no later than 01 February of the year following the assessment cycle.

Role of the President

No later than 15 March of the year following the assessment cycle, the President forwards the Secretarial report, the annual assessment letters and any comments the President considers appropriate to the Congress.

¹⁰ In 1993, the Department of Energy at the direction of the President and Congress, established the Stockpile Stewardship Program to sustain the safety and effectiveness of the nation's nuclear weapons stockpile without returning to nuclear testing. The National Nuclear Security Administration provides Federal oversight and management of the Program through its Office of Defense Programs.