



Department of Energy
National Nuclear Security Administration
Washington, DC 20585

October 24, 2000

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DNF SAFETY BOARD

The Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, N.W.
Suite 700
Washington, D.C. 20004

Dear Mr. Chairman:

The Implementation Plan (IP) for Defense Nuclear Facilities Safety Board Recommendation 97-2 requires a quarterly status report. Enclosed is the Department of Energy's quarterly status report for the fourth quarter, Fiscal Year (FY) 2000.

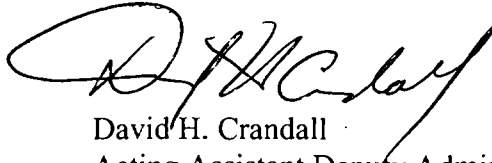
The IP contains 30 milestones, 27 of which have been completed. All three of the remaining milestones are overdue. Recovery Plans, which were established to complete these milestones, are included in Attachment B to this report to chronicle progress. The Management Team is working very hard to complete all remaining milestones and to continue implementing the Nuclear Criticality Safety Program.

Activities aimed at implementing the Secretary of Energy's decision to transfer Los Alamos Technical Area (TA)-18 (TA-18) capabilities to another location continued during the quarter. Studies necessary to support a Record of Decision in 2001 continued. Activities included completion of a TA-18 Mission Review, initiation of the justification to study relocation of TA-18 Missions, and a pre-conceptual relocation program plan. Defense Programs is committed to assure that if TA-18 Missions are to be relocated, that an orderly transfer of capabilities to a new location and care will be taken to assure continuity of Departmental programs and commitments. My staff is involved in these activities and will work to assure that Nuclear Criticality Safety Program needs are met throughout the relocation process.



While the Department has not completed all Recommendation 97-2 Implementation Plan commitments, it has made significant progress and is working very hard to assure that the Nuclear Criticality Safety Program infrastructure is maintained for safe, secure, and efficient fissile material handling. We are committed to continue working with you in that regard.

Sincerely,

A handwritten signature in black ink, appearing to read "D. H. Crandall", written in a cursive style.

David H. Crandall
Acting Assistant Deputy Administrator
for Research, Development, and Simulation
Defense Programs

Enclosure

cc (w/encl):
M. Whitaker, S-3.1

QUARTERLY STATUS OF THE IMPLEMENTATION PLAN
FOR
DEFENSE NUCLEAR FACILITIES SAFETY BOARD RECOMMENDATION 97-2
FOURTH QUARTER FISCAL YEAR 2000

The Department of Energy (DOE) began implementing Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 97-2 in January 1998 by formally establishing the Nuclear Criticality Safety Program (NCSP). Each of the seven NCSP Tasks (Critical Experiments, Benchmarking, Analytical Methods, Nuclear Data, Training and Qualification, Information Preservation and Dissemination, and Applicable Ranges of Bounding Curves and Data) is dependent upon the others for a successful program. Implementation of the NCSP is being accomplished according to the Five-Year NCSP Plan which was published in August 1999.

The Nuclear Criticality Safety Program Management Team (NCSPMT) and the Criticality Safety Support Group (CSSG) are performing their respective chartered functions in supporting the Responsible Manager's execution of the Implementation Plan (IP). During the quarter, the NCSPMT and CSSG coordinated activities aimed at completing IP milestones and continued to provide justification necessary for maintaining funding support. Of particular note was a CSSG meeting which was held in Washington, D.C., August 29 -31, 2000. The CSSG worked through a rigorous agenda of technical and programmatic items and had a very productive meeting with members of the DNFSB Staff. In addition, selected CSSG and NCSPMT members met with program sponsors to discuss progress, issues, and answer technical questions. All of these meetings were very positive and helped garner continued support for the NCSP. The NCSPMT has been tasked by the Deputy Secretary to coordinate a workshop to be held in late October 2000, in Albuquerque, New Mexico, to identify ways of improving interactions between criticality safety and operations staffs. Three members of the DNFSB Staff are expected to attend.

This quarterly report provides a status of activities for each of the seven NCSP elements, as well as Recommendation 97-2 IP Milestones and Recovery Plans. Steady progress is being made in all seven of the NCSP task areas and in completing the three remaining milestones. There are two attachments to this report: Attachment A is a table depicting the status of all IP Deliverables and Milestones, and Attachment B contains Recovery Plans for the three remaining milestones. The NCSPMT is working very hard to complete all remaining milestones and to continue implementing the NCSP.

Accomplishments and key issues in each of the program task areas which arose during the period are as follows.

Critical Experiments

A status of experimental activities conducted at the Los Alamos National Laboratory (LANL) during the period by critical assembly is as follows:

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Flattop: Flattop was inoperable for this entire quarter due to a malfunction of one of the control rod drive systems and the subsequent declaration of a Technical Safety Review (TSR) violation. A path forward for restart of Flattop, which includes replacement of the 50-year old control rod drive system and the performance of a full readiness assessment has been approved by the Department of Energy, Los Alamos Area Office (DOE/LAAO). It has since been decided that the control system and the hydraulics for Flattop should also be replaced. Because this will take about two years to complete, a request will be submitted to DOE/LAAO for a Justification for Continued Operation so that Flattop can remain operational during this major refurbishment.

Comet/Zeus: Essentially all of the measurements that can be made for the current experimental configuration have been completed. No further measurements will be made with Zeus until approval is received from DOE/LAAO to proceed with the remaining experiments. A request to continue with these experiments and all of the supporting safety documentation was submitted to DOE/LAAO in December 1999.

SHEBA: Several SHEBA operations were performed this quarter to support experiments designed to assess the production of radiolytic gas in uranyl fluoride fuel. While conducting these experiments, it was discovered that the cover gas system, which is designed to sweep out the radiolytic gasses and pass them through the catalytic recombiner, was not performing at full capacity. This resulted in an Unusual Occurrence report and termination of SHEBA operations. The cause of the cover gas system failure is still being investigated, and SHEBA will be inoperable until the system failure is fully understood and corrected.

Godiva: The Godiva assembly was returned to operational status this quarter. Because of the long down time (i.e., approximately nine months), several series of operations were performed to meet various TSR surveillance requirements and perform operator training and reproducibility studies. A Godiva free run was performed in support of one of the criticality safety courses. A high Godiva burst operation (200 degrees C) was also performed this quarter in support of dosimetry studies.

Planet: Planet operations were performed for one of the two criticality safety classes conducted during this quarter. A failure of the I/O board on the control computer resulted in Planet being inoperable for the first course. Planet is currently operable, and experiments with uranium foils and waste matrix/tuff materials continued during this quarter.

Benchmarking

Benchmarking efforts during the fourth quarter of Fiscal Year (FY) 2000 were focused almost entirely on the publication of the September 2000 Edition of the "International Handbook Of Evaluated Criticality Safety Benchmark Experiments." This major International Criticality Safety Benchmark Evaluation Project (ICSBEP) Milestone was completed as scheduled during September. Distribution of this version of the handbook, in CD-ROM format, began on September 25; however, the ICSBEP Internet Site (<http://icsbep.inel.gov/icsbep>) was updated and the entire contents of the 2000 Edition of the handbook were made available on September 13, 2000. Included in this version of the handbook are 22 newly approved evaluations. The handbook now

contains 284 evaluations that span over 19,000 pages and provide 2,352 critical configurations that may be used by criticality safety analysts for validation of their analytical methods.

The ICSBEP reported to the Organization for Economic Cooperation and Development (OECD) Nuclear Energy Agency (NEA) Nuclear Science Committee (NSC) Working Party on Nuclear Criticality Safety on the status of the ICSBEP at the annual meeting at OECD Headquarters in Paris, France. Informal meetings were also held at which the creation of an ICSBEP database was discussed. The OECD is collaborating with the ICSBEP to create this database in a cost-effective manner (much of the cost will be paid by the OECD). The result of this effort will be a searchable database that will enable criticality safety practitioners to more effectively identify the experiments that are needed for their work. The database will also make it easier to characterize the information generated by the ICSBEP and identify gaps and inconsistencies in the data.

A request for an evaluation of the experiments documented in a report entitled, "Criticality of Liquid Mixtures of Highly U-235 Enriched Uranium Hexafluoride and Hydrofluoric Acid," Y-CDC-9 was received and processed during the latter part of the fourth quarter. Uranium hexafluoride/hydrofluoric acid systems are common in the commercial Light Water Reactor fuel cycle like the one in use at the United States Enrichment Corporation efforts at the Paducah Gaseous Diffusion Plant. These experiments, which were performed in France, are the only known series in which hydrofluoric acid is used as a moderator. Cross sections for hydrogen bound in hydrofluoric acid are not available in the Evaluated Nuclear Data File. Validation against critical experiments such as these is the only means to demonstrate the adequacy of using some other hydrogen thermal kernel as an approximation to hydrogen in hydrofluoric acid. The French ICSBEP participants agreed to rearrange their work plan and will attempt to complete this evaluation for the 2001 publication. This will constitute a significant addition to the Handbook.

Analytical Methods

Staff at the Oak Ridge National Laboratory (ORNL) continued to maintain KENO software and assist the nuclear criticality safety community in the use of this software. This effort included modification of the SCALE/KENO/CENTRM criticality sequences to treat resonance shielding on a continuous energy basis with the inclusion of neutron slowing down due to inelastic scattering. Current in-house testing is being conducted to make the CENTRM sequences available in January for beta testing in the production mode. Preparations for two SCALE/KENO-V.a workshops scheduled for October and November were carried out. This work included new visuals for the revised set of sample problems and a new set of input specifications. Corrections were made in the KENO-VI algorithms for the determination of material region volumes. Significant assistance was rendered to the Idaho National Engineering and Environmental Laboratory criticality safety group in their validation of SCALE/KENO for U-233/Thorium fuel disposition studies. Staff from ORNL also participated in four of the Working Party for Nuclear Criticality Safety (WPNCS) expert group meetings at the NEA/OECD in France in September, including the new Source Convergence Expert Group, and continued to provide technical support for the revision of American National Standards

Institute/American Nuclear Society-8 Standards on the mixed oxides, the actinides, and criticality accident emergency preparedness.

Staff at the Los Alamos National Laboratory (LANL) continued to maintain MCNP software and assist the nuclear criticality safety community in the use of this software. An introductory MCNP class was taught in Richland, Washington, in September. Also in September, several papers on MCNP development were presented at the Radiation Protection & Shielding Division Topical in Spokane. The patches to MCNP4C developed last quarter to enhance the new macro-body capability by adding additional bodies and by allowing macro-body input on surface cards have been integrated into the development version of MCNP4D. A new interactive geometry plotter has been developed in this version of the code. Staff from LANL participated in the WPNCS at the NEA/OECD in France in September and agreed to active participation in the ongoing activities of the Source Convergence Expert Group. Input on priorities for future MCNP development was also received at the WPNCS.

In the source convergence work at Argonne, an absorption-based fission site generation scheme was implemented in VIM, and a series of physically identical but statistically independent replica calculations demonstrated consistent advantages in computational efficiency when estimating reaction rates. The defaults in VIM will be changed to the absorption-based scheme to avoid source site re-sampling between generations and increase inefficiency. R. Blomquist chaired the inaugural meeting of the OECD/NEA Experts Group on Source Convergence in Criticality Analyses, at which seven benchmark source convergence exercise problems (including two from Argonne) were proposed and adopted. Four of these exercise problems were singled out for near-term analysis and comparison. The initial set of results should be available by the end of FY 2001. New and replacement VIM cross sections for about seventy nuclides produced during FY 2000 were plotted, and most of them were directly compared with the corresponding MCNP cross sections. They will be placed into production during FY 2001. A comprehensive VIM cross section quality assurance spreadsheet with about 800 nuclide entries has been assembled and is in use to provide traceability of cross section versions to analysts.

Nuclear Data

Data measurements at ORELA for U-233 and chlorine were carried out. Transmission data for U-233 using a thick sample were completed. The data are being used for evaluation of the U-233 cross section in the unresolved resonance region. The high resolution of the data will allow the unresolved evaluation to be extended up to 800 keV and help identify and address concerns with benchmark calculations in the intermediate energy region.

Capture cross section measurements for chlorine were completed. The analysis and data reduction of the chlorine data are being processed. This data will be included in the SAMMY analysis for extracting sensitivity and covariance data. The chlorine resonance analysis is under way.

Plans for ORELA measurements of transmission data and capture data for potassium have been discussed. For now, sample preparation for natural potassium (K) and enriched potassium (K-41) has been performed. Presently, work is being done on the design of sample holders and targets. It is expected that measurements will begin in December.

Testing of the SAMMY U-233 resolved resonance evaluation has been carried out for thermal energy benchmarks, intermediate energy benchmarks, and fast energy benchmarks. The benchmarks used in the calculations were chosen from the ICSBEP Handbook and the Cross Section Evaluation Working Group (CSEWG). The calculations were performed using the code KENO.Va with the 199-group of the VITAMIN-B6 cross section library, and results are compared with results from calculations using the ENDF/B-VI data and the JENDL (Japanese Data File). An ORNL/TM report documenting this work is being prepared.

A report ORNL/TM-2000/212, (R-MATRIX EVALUATION OF THE O-16 NEUTRON CROSS SECTIONS UP TO 6.3 MEV) on the resonance evaluation of the O-16 cross section has been completed during the quarter, and documentation is being prepared.

Several modifications to the NJOY code were made during the quarter. A new version of the code was sent to LANL to address problems with spin assignment on the Reich-Moore resonance parameter representation for Al-27 and Si-29 evaluations. In addition, NJOY was modified to calculate penetrability for charge particle generation. A suitable ENDF format to accommodate outgoing charge-particle spin channels using the Reich-Moore resonance parameters is under consideration. This issue will be discussed with the Format committee of the CSEWG.

At the Argonne National Laboratory, work on resonance theory continued, focusing on improved treatment of the probability table methods in the unresolved resonance energy range. Coding for the zero temperature case has begun, and inclusion of the analytical results from all orders of weighted moments is being investigated.

Training and Qualification

This program element includes three sub-elements: (1) hands-on criticality safety training at Los Alamos; (2) training development; and (3) criticality safety qualification program activities.

Hands-on criticality safety training continued at Los Alamos. One 3-day course and one Basic 5-day course were held during the quarter.

Late in the last quarter of Fiscal Year 2000, work was started on two new Nuclear Criticality Safety Engineer Training modules: Criticality Accident Analysis Methods and Hand Calculation Methods, Part 1. Work on these modules will continue during the first quarter of FY 2001.

Regarding qualification activities, the Department is moving forward with issuance of the draft page change to DOE O 420.1, Facility Safety. The page change establishes requirements for training and qualification programs for Nuclear Criticality Safety Staff. All comments from the

Department-wide review and coordination have been resolved. On May 30, 2000, the Board's staff sent the Department a letter in which the staff indicated they have no comments on the proposed wording of the page change. The page change has been forwarded to the Office of Management and Administration and is expected to be issued by the end of October 2000 (see Recovery Plans for IP Milestones 6.6.3.3 and 6.6.3.4).

Departmental criticality safety personnel are working towards qualification by December 2000 (see IP Recovery Plan for Milestone 6.6.4.2). At least sixteen Federal employees from around the complex plan to qualify. Milestone 6.6.4.2 will have been met when at least one Federal employee has qualified from each site which has a criticality safety program. The Department is tracking progress of these individuals. Currently, five individuals have met the requirements for qualification and are in the process of completing the documentation of their qualifications for management approval. The remainder plan to be qualified by November or December 2000.

Information Preservation and Dissemination

This program element currently contains two sub-elements: (1) the Criticality Safety Information Resource Center (CSIRC); and (2) NCSP web page development.

Regarding the CSIRC Program, the following progress has been made:

The highlight of the CSIRC program for the past quarter was the Criticality Heritage Video 2000 Conference, held at LANL September 18-20, 2000. Over a period of 2.5 days, nine videotapes were made. The Conference brought criticality safety pioneers from LANL and ORNL together with younger criticality safety specialists in discussions on a number of topics pertinent to the "heritage period" of criticality safety, roughly 1945-1975. The pioneers from Los Alamos were Hugh C. Paxton and David R. Smith. The pioneers from ORNL were Dixon Callihan and Joseph Thomas. The sessions were as follows:

Session 1: Critical Assemblies for Criticality Safety

Session Chair: John D. Orndoff

Specialist: Roger W. Brewer

Objective: To reaffirm that experimental results provide the basis for establishing criticality safety in the physical world.

Session 2: Criticality Accidents at Oak Ridge and Los Alamos

Session Chair: William Stratton

Specialist: Shean P. Monahan

Objective: To review the undocumented aspects of the Oak Ridge Y-12 accident of June 16, 1958, and the Los Alamos accident of December 30, 1958.

Session 3: Dosimetry of Criticality Accidents

Session Chair: George W. Voelz, M.D.

Medical Specialists: Ronald Goans, M.D.; Fred Mettler, M.D., and Donald Petersen, Ph.D., Pharmacology

Objective: To examine dosimetric techniques that are most useful to evaluate persons exposed to high levels of radiation from criticality accidents from a medical perspective.

Session 4: Clinical Effects of Criticality Accidents

Session Chair: George W. Voelz, M.D.

Medical Specialists: Drs. Goans, Mettler, and Pteresen

Objective: To review medical data about survivors and fatalities from past criticality accidents, including improvements in medical management.

Session 5: The development of ANS Standards for criticality safety

Session Chair: Thomas P. McLaughlin

Specialist: James S. Baker

Objective: To clarify that Standards provide documented consensus for good practice in criticality safety.

Session 6: The Interaction Between Criticality Safety Specialist and Operational Personnel

Session Chair: Robert Nance

Specialist: Stuart G. Vessard

Objective: To explore the interaction between criticality safety specialists and operational personnel.

Session 7: Regulatory Paradigm Shifts

Session Chair: Calvin M. Hopper

Specialist: Charles D. Harmon II

Objective: To provide examples of the impacts on Nuclear Criticality Safety (e.g., programmatic, administrative, fiscal, technical, and regulatory values and expectations) from regulatory paradigm shifts.

Session 8: Computational Methods Developed During the Heritage Period

Session Chair: R. Michael Westfall

Specialists: David K. Hayes

Objective: To examine the history of simple calculational methods and early machine calculations developed during the Heritage period.

Session 9: Video of Conference wrap-up

Session Chair: Normal L. Pruvost

Subject: Observations, summary, and conclusions of the conference.

Other progress during the 4th quarter includes the following:

1. The references to LA-12808 are available on the CSIRC website.
2. The overhaul of the CSIRC website was completed.

3. Robert E. Rothe is nearing completion on his *magnum opus*. He proposes to call the paper, "A Useful History of the Critical Mass Laboratory at Rocky Flats."

The NCSP web site at the Lawrence Livermore National Laboratory is being maintained and improved. This web site provides technical information and serves as a pointer to other web sites which are important to the NCSP. During the fourth quarter of FY 2000, the NCSP web site highlights included:

- (1) Compilation and conversion of the NCSP users survey data to the MS window versions of MS Office 95/97/98 and MS Excel 4/3/2 and provided the data to the NCSP for review.
- (2) Addition of Java Applet announcement and hyperlink for, "A Review of Criticality Accidents, 2000 Revision" to LANL's CSIRC web site.
- (3) Installation of computer security fixes on the NCSP web site to meet all DOE Cyber-security requirements.
- (4) Announcement of availability of the quarterly report, "QUARTERLY STATUS OF THE IMPLEMENTATION PLAN FOR DEFENSE NUCLEAR FACILITIES SAFETY BOARD RECOMMENDATION 97-2 THIRD QUARTER FISCAL YEAR 2000" and included a copy of the report on the web page for download.
- (5) Updating of the CSSG membership list and the Endusers Group Membership list.
- (6) Announcement of availability of the technical session agenda for the forthcoming ANS Winter meeting in Washington DC.
- (7) Initiation of conversion of the current NCSP web pages to a frame base html design as suggested by the user survey input.

Applicable Ranges of Bounding Curves and Data

During the fourth quarter of FY 2000, three of the five technical program tasks (TPP) were addressed. Progress and draft technical reports were provided to the CSSG and the NCSP fiscal sponsors (DP, EM, and EH).

TPP Task 1 - *Implement use of optimization techniques for establishing bounding values*. The final draft copy of the prototypic SWAN-SCALE one-dimensional material-optimization code report was provided to the DOE NCSPMT Co-Chairs during the 29-31 August CSSG meeting in Washington, D.C. The issuance of the code is projected to occur by the end of 2001 with the release of the updated SCALE system. The subcontract with the University of California, Berkeley, was extended for modifying the code to geometric optimization routines.

TPP Task 2 - *Investigate means to resolve or incorporate anomaly and discrepancy effects into bounding values.* The draft technical report on the investigation of discrepancies in the National Institute of Standards and Technology experiments was completed and the report was provided to the NCSPMT Co-Chairs during the 29-31 August CSSG meeting in Washington, D.C.

TPP Task 3 - *Investigate utilization of sensitivity and uncertainty (S/U) and statistical methods for identifying experimental needs.* At the August 29-31 Washington, D.C. meeting, the Co-chairs of the NCSPMT were provided the draft report about sensitivity and uncertainty studies that were performed on a previously proposed sludge transfer from the Hanford K-Basin to Tanks (K-T) and National Spent Nuclear Fuel (SNF) disposal parameters as compared to a suite of approximately 425 benchmarks. Full paper presentations/tutorials were developed and are being drafted for the November 2000 ANS Nuclear Criticality Safety Division meeting special invited session on "Sensitivity and Uncertainty Analysis Methods for Establishing Area of Applicability and Subcritical Margins." This session will air the capabilities, limitations, and future directions of AROBCAD as explained through examples of the K-T, SNF, and other recent applications being documented in the draft report of the TPP Task 3.

TPP Task 4 - *Develop guidance for interpolating and extrapolating bounding values.* Effort on this subtask currently continues at ORNL considering various methods for evaluating computational biases and uncertainties due to cross section and experimental benchmark measurements using various integral parameters derived from S/U information and Generalized Linear Least Squares Method. This subtask will progress as further relevant information is generated and evaluated using the results of AROBCAD Task 3 and the results from TPP Task 5.

TPP Task 5 - *Develop guidance for establishing bounding margins of subcriticality.* No work was conducted during the fourth quarter of FY 2000 on the draft assessment report of United States nuclear criticality safety community (commercial and contractor) practices and methods for establishing bounding margins of subcriticality. Completion of this report will be delayed until after the special invited session (discussed in TPP TASK 3, above) so feedback from industry can be considered.

ATTACHMENT A: IP COMMITMENT AND DELIVERABLE/MILESTONE STATUS

Commitment	Deliverable/Milestone	Due Date	Status
6.1 Assess critical experiments program	1. Assessment report of criticality research program	March 1998	Completed
6.2.1 Perform CSIRC pilot program	1. Identify an experiment to archive 2. Archive logbook(s) and calculation(s) for that experiment 3. Videotape original experimenters 4. Digitize data and calculations 5. Publish data and calculations	November 1997 December 1997 January 1998 February 1998 April 1998	Completed Completed Completed Completed Completed
6.2.2 Continue to implement the CSIRC program	1. Collocate logbooks (copies or originals) from all U.S. critical mass laboratories 2. Screen existing logbooks with original author/experimenter 3. CSIRC program plan	December 1998 December 1998 December 1998	Completed Completed Completed
6.3 Continue and expand work on ORNL sensitivity methods development	1. Technical program plan 2. Document initiation of priority tasks from the program plan in the quarterly report to the Board	July 1998 January 1999	Completed Completed
6.4 Make available evaluations, calculational studies, and data by establishing searchable databases accessible through a DOE Internet web site	1. DOE criticality safety web site 2. Y-12 evaluations on DOE web site 3. Calculations compiled by the Parameter Study Work Group on DOE web site 4. Nuclear Criticality Information System Database on DOE web site	March 1998 June 1998 September 1998 March 1999	Completed Completed Completed Completed
6.5.1 Revise and reissue DOE-STD-3007-93	1. Revise DOE-STD-3007-93	September 1998	Completed

Commitment	Deliverable/Milestone	Due Date	Status
6.5.2 Issue a guide for the review of criticality safety evaluations	1. Departmental guide for reviewing criticality safety evaluations	May 1999	Completed
6.6.1 Expand training course at LACEF	1. Expanded LACEF training course	July 1998	Completed
6.6.2 Investigate existing additional curricula in criticality safety	1. Assessment of additional training needs and review of available supplementary curricula	June 1998	Completed
	2. Initiate a program which addresses identified needs	December 1998	Completed
6.6.3 Survey existing contractor site-specific qualification programs	1. Report on the review of site qualification programs	June 1998	Completed
	2. Guidance for site-specific criticality safety training and qualification programs	September 1998	Completed
	3. Guidance to procurement officials specifying qualification criteria for contractor criticality safety practitioners	September 1998	Overdue: Expected completion date is October 2000 - See Recovery Plan in Attachment B.
	4. DOE Field will provide line management dates upon which contractors will have implemented guidance in Deliverable #2, above	March 1999	Overdue: Expected completion date is April 2001 - See Recovery Plan in Attachment B.
6.6.4 Federal staff directly performing criticality safety oversight will be qualified	1. Qualification program for Departmental criticality safety personnel	December 1998	Completed
	2. DOE criticality safety personnel qualified	December 1999	Overdue: Expected completion date is December 2000 - See Recovery Plan in Attachment B
6.7 Each site will conduct surveys to assess line ownership of criticality safety	1. Individual sites issue report of findings	June 1998	Completed
6.8 The Department will form a group of criticality safety experts	1. Charter for Criticality Safety Support Group approved by the NCSPMT	January 1998	Completed

Commitment	Deliverable/Milestone	Due Date	Status
6.9 Create NCSPMT charter and program plan	1. NCSPMT charter	January 1998	Completed
	2. NCSPMT program plan	June 1998	Completed

ATTACHMENT B: RECOVERY PLANS FOR OVERDUE MILESTONES

Recovery Plan for IP Milestone 6.6.3.3: Guidance to procurement officials specifying qualification criteria for contractor criticality safety practitioners (was due 9/98).

<u>Action</u>	<u>To Be Completed By</u>	<u>Responsibility</u>
1. MA issues draft Page Change to Field Management Counsel (FMC) for initial review.	March 2000	Completed
2. FMC comments received and incorporated.	May 2000	Completed
3. FMC approves release of Draft Page Change for review and comment.	May 2000	Completed
4. MA issues draft Page Change for 60-day for review and comment.	May 2000	Completed
5. Comments due; EH starts comment resolution.	July 2000	Completed
6. EH-31 completes comment resolution; forwards final draft Page Change to MA.	September 2000	Completed
7. MA releases approved Page Change.	October 2000	DP-10

Recovery Plan for IP Milestone 6.6.3.4: DOE Field will provide line management dates upon which contractors will have implemented guidance in Milestone 6.6.3.2 (was due 3/99).

<u>Action</u>	<u>To Be Completed By</u>	<u>Responsibility</u>
1. MA releases approved Page Change (Action #7 of Recovery Plan for Milestone 6.6.3.3).	October 2000	DP-10
2. Contractors inform DOE Field as to dates by which they will have implemented site specific training and qualification programs.	April 2001	Field
3. Field reports status to DP-10.	April 2001	Field

Recovery Plan for IP Milestone 6.6.4.2: DOE criticality safety personnel qualified (was due 12/99).

<u>Action</u>	<u>To Be Completed By</u>	<u>Responsibility</u>
1. DP will inform the FMC about the Federal Qualification Program.	June 1999	Completed
2. Publish Federal Qualification Standard.	November 1999	Completed
3. Lead Program Secretarial Officers (LPSOs) Task Field Managers.	March 2000	Completed
4. Fed Qual Plans submitted to site managers.	May 2000	Completed
5. DOE criticality safety personnel qualified..	December 2000	Field