Department of Energy
Washington, DC 20585

February 9, 1996

The Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW
Suite 700
Washington, DC 20004

Dear Mr. Chairman:

The Defense Nuclear Facilities Safety Board Recommendation 91-6 Implementation Plan requires that the Department provide a status report on implementation of the Radiological Control Manual at the Department of Energy sites. The attached final 1994 report was prepared by the Cognizant Secretarial Officers and signed on December 6, 1995.

Sincerely,

Peter N. Brush
Principal Deputy Assistant Secretary
Environment, Safety and Health

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Department of Energy
Washington, DC 20585

December 6, 1995

MEMORANDUM FOR THE SECRETARY

SUBJECT: INFORMATION: Radiological Control Manual Implementation Status, December 31, 1994

ISSUE: Attached is the 1994 status report on implementation of the Radiological Control Manual at the Department of Energy sites, provided to you as required by the Defense Nuclear Facilities Safety Board Recommendation 91-6 implementation plan. This report, developed by the Department of Energy Radiological Control Coordinating Committee, shows that:

1. Many Department of Energy facilities, due to their diligent efforts, have advanced significantly in achieving the goals outlined in the Radiological Control Manual. Generally, the 1994 progress in implementing the Manual's requirements was slower than projected in 1993, mainly due to the focus placed by all radiation protection organizations on documenting their Radiation Protection Programs as required by 10 CFR 835, "Occupational Radiation Protection", rule that became effective in January 1994.

2. Between 1993 and 1997, the contractors operating DOE sites plan to spend $200 million to bring their facilities into full compliance with the Manual's requirements and to sustain this level of compliance. For some sites, schedule commitments are listed as contingent on funding. Reprioritization of funding dollars mainly due to 10 CFR 835 implementation is the basis for significant revisions of the implementation plan schedules that appeared at the end of 1994.

3. The implementation plan for the Defense Nuclear Facilities Safety Board recommendation 91-6 commits to have core radiological training completed by December 31, 1994. This commitment was met at the majority of the defense nuclear facilities.

4. The Operations Offices are working with the contractors to improve the cost-effective implementation of the Manual. The Radiological Control Coordination Committee continues to facilitate the exchange of cost-effective implementation processes and discussion of proposed Manual changes that may enhance implementation.

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Presently, extensive work is in progress to fully implement 10 CFR 835 requirements by January 1, 1996, and to revise the Radiological Control Manual in order to become a part of the Department's Directive System.

Victor H. Reis
Assistant Secretary for
Defense Programs

Thomas P. Grumbly
Assistant Secretary for
Environmental Management

Martha A. Krebs
Director
Office of Energy Research

Terry R. Lash
Director
Office of Nuclear Energy

Attachment

cc:
Assistant Secretary for Environment, Safety and Health
Manager, Albuquerque Operations Office
Manager, Chicago Operations Office
Manager, Oak Ridge Operations Office
Manager, Richland Operations Office
Acting Manager, Oakland Operations Office
Acting Manager, Idaho Operations Office
Manager, Nevada Operations Office
Manager, Savannah River Operations Office
Acting Manager, Ohio Field Office
Manager, Rocky Flats Office

1994 Radiological Control Manual Implementation Status Report for Department of Energy Sites

1. Introduction

This report documents the progress made by DOE sites in the past year in implementation of the Radiological Control Manual. The report is based on the various contractor and operations office status reports and includes pertinent information gathered during visits to Fernald, Hanford, Oak Ridge, Rocky Flats, Nevada, Albuquerque, and Oakland. It reflects the Manual's implementation status as of December 31, 1994.

There are 51 Implementation Plans for the whole Department. Three of these plans are combined in a unique document for the Hanford site. Also at Hanford, Bechtel Hanford Inc. is writing its implementation plan. As a result of consolidation of contractors at INEL, Lockheed Idaho Technologies Company combined five of the INEL implementation plans in a single document which was submitted to the DOE Headquarters on June 1, 1995. Two Environmental Management facilities, Paducah and Portsmouth, due to their transitions in mission and ownership, do not have implementation plans. One Defense Program facility, Ross Aviation at Albuquerque, wrote their first implementation plan. One Environmental Management facility, Battelle Columbus Laboratories, which is regulated by the Nuclear Regulatory Commission, is applying for exemption from the Radiological Control Manual. There are a significant number of sites that have facilities under the Defense Nuclear Facilities Safety Board jurisdiction.

During 1994, the progress in implementing the Radiological Control Manual was affected by several events:

- In January 1994, 10 CFR 835 "Occupational Radiation Protection" became effective. This Rule requires that DOE contractors document their Radiation Protection Programs (RPPs) by January 1, 1995. Baselining Rule implementation status and generating the corresponding RPPs became the main component of DOE radiation protection organizations activities.

- In April 1994, Revision 1 of the Radiological Control Manual was informally issued. This Revision was meant to better tune the Manual with 10 CFR 835 Rule and to address some changes proposed by the DOE radiation protection community. In accomplishing these tasks, the new Revision included significant changes to the Manual.

- In July 1994, the Radiological Control Manual, Revision 1, was formally issued via DOE Notice 5480.10. This Notice mentioned for the first time that the Manual will be formally included in the new Departmental Directive System.

- During 1994, in establishing implementation strategies for 10 CFR 835, various DOE program and operations offices adopted, indirectly, new strategies on the Manual implementation.

Combined, these events resulted in reprioritization of the Radiological Control Manual compliance schedules, reassessment of the Manual's compliance status, and delays in performing the annual review/update of the corresponding implementation plans.

Environmental Management has updated the database summarizing some of the salient information from the Radiological Control Manual Implementation Plans. This database, updated to reflect the most recent status reports prepared by the DOE contractors, contains information for all Defense, Environmental Management, and Nuclear Energy facilities, and part of the Energy Research facilities. For each site, this database includes information on initial implementation status, the date on which full compliance was achieved or is planned to be achieved, the projected costs, and radiological training status. Based on this database, the trends were used to generate Table I. This Table has six parts: general information, implementation status, implementation schedule, implementation cost, core academic training status, and radiological control managers for each site. This Table was used for numerical illustrations included in this report.

2. General View of Radiological Control Manual Implementation Plans

Implementation Status

The majority of the actions taken during Radiological Control Manual implementation have to date been associated with establishing the infrastructure, policies, and procedures, and providing training needed to meet the goals of the Radiological Control Manual for an acceptable program. Many facilities focused on rigorous programmatic and field verification for 10 CFR 835 implementation. This effort translated into full documented verification of those Radiological Control Manual Articles directly related to Rule requirements through cross-references contained in the Radiation Protection Programs or in the associated matrices. As a result of this action, some sites changed many of the items identified as being in full compliance during previous assessments to partial or noncompliance.

For the Department of Energy facilities, the percentage of full compliance with the Articles of the Radiological Control Manual is 71% for an overall average, ranging from 18 to 100% (Figure 1). This represents a 29% improvement in the compliance status since it was first calculated in December of 1992 and a 7% improvement relative to the end of 1993. The percentages reported above would all be significantly higher if "partial compliance" with the Radiological Control Manual Articles were included in the calculation or if the compliance percent would be calculated based on the Manual requirements (about 1300) instead of Articles (total number of Articles is 184). If the present planning will be followed, the average DOE compliance with the Radiological Control Manual requirements will exceed 90% by the end of 1995 (Figure 3).

Implementation Schedules

The available information shows that, to date, the following sites are in full compliance or very close to it: Pinellas, TSD, UMTRA, WIPP, ANLE, INEL, WVDP, MKF-OR, ORISE, WSSRAP, and HEHF. Several other sites plan to reach full compliance by the end of 1995: GJPO, ROSS, EML, NDRL, RESL, LEHR, CEBAF, FUSRAP, and WHC. However, there are sites facing complex problems in implementing the Radiological Control Manual, in particular at facilities with extensive contaminated areas generated by past operations, and direct support by the line management is needed.

All facilities under the DNFSB jurisdiction are committed to implement the Manual by October 1996. The schedule for compliance could extend beyond this date for several major projects in progress at the defense nuclear facilities. The Oak Ridge Operations Office identifies the following projects as possibly going beyond October 1996 for full implementation of the Manual:

- Control of radioactive drains at ORNL and K-25 will require assessment, engineering, and construction. The sequential process may not be fully completed by October 1996.

- Site characterization and contamination control at Y-12 and K-25 may not be completed by 1996 because of the number of facilities and size of sites. First priority will be given to facility site characterization and control based on health and safety considerations.

- Protection requirements for records are also not likely to be completed by October 1996.

These projects reflect non-mandatory requirements. Technical equivalencies could be used to demonstrate that the intent of the Manual is being met even if a project has not been completed.

Implementation Costs

Contractors at Department of Energy sites used or project to use about $200 million to bring their facilities into full compliance with the Radiological Control Manual. Almost 60% of these funds were spent or are planned to be spent by the end of the FY 1995. Almost $130 million from these funds are required by the following eight sites: RFETS, Y-12, LANL, Fernald, SNL, MKF-OR, ORNL, and K-25. The cost for each individual site is given in Figure 2. Many sites report insignificant incremental cost for implementing 10 CFR 835 due to this budgeting effort for the Manual.

For many sites, budget information is at best representative. Budget quality numbers are not in some plans, and there is no assurance that the activities are funded to meet milestones. It is not possible from the information provided to evaluate the justification for the cost.

There are two areas of concern. First, there are sites caught in transition from one DOE program to another, for which timely availability of needed funds is critical (e.g., ETEC and Mound). Second, there are sites with multiple Secretarial Offices with differences in philosophies for funding radiation protection activities, and these differences could lead to confusion concerning sources of money to implement the Radiological Control Manual.

Radiological Training

Core radiological training, consisting of four courses (General Employee Radiological Training - GERT, Radiological Worker training - RW I and II, and Radiological Control Technician - RCT), began in January 1993. The Department of Energy sites have trained 87% in General Employee Radiological Training of the 111,000 personnel to be trained; 85% in Radiological Worker I of the 14,000 needing training; 84% in Radiological Worker II of the 44,000 needing training; and 64% in Radiological Control Technician of the 2700 requiring training.

The implementation plan for the DNFSB Recommendation 91-6 commits to have core radiological training completed by December 31, 1994. The available information shows that this commitment was met at the majority of the defense nuclear facilities. Mound expects to conclude the core training by November 15, 1995, and RFETS by September 30, 1995.

The cost for radiological training is one quarter of the total cost for Radiological Control Manual implementation. At some sites, e.g., Fernald, part of radiological worker training has been incorporated into Hazardous Waste Operations (HAZWOPER) as a cost-saving and streamlining effort.

3. Initiatives for Improving Safety and Saving Cost

Many sites have made diligent efforts to achieve cost savings for their sites while maintaining or improving radiation protection for their workers.

- Articles 113 and 371 of the Radiological Control Manual allow alternatives that are technically equivalent to be used in place of "should" statements in the Manual. Some sites have made use of the capabilities of the Technical Equivalency Determination provision under the above Articles to reduce costs without diminishing the quality of the radiation protection programs for the workers. These determinations are shown in Table II. The possibilities opened up by the above Articles should be better exploited, and the corresponding technical equivalency better documented.

- FERMCO requested authorization to post Contamination and High Contamination Areas based on the presence of removable contamination instead of basing the posting of these areas on both removable and total (fix plus removable) contamination. EH office granted an exemption to Article 235 requirements for posting of High Contamination Areas only. However, this exemption request highlights the significance of the posting criteria for contaminated areas (including soil) to the effective implementation of controls for radioactive contamination. Accordingly,

the EH Office included the change to the High Contamination Area posting criteria granted to Fernald. in the proposed amendment to 10 CFR 835.

- Fernald's internal dosimetry program has implemented a new analytical method for measuring uranium content in urine. The number of bioassay samples taken in 1994 is lower than that of 1993 due to purchase and use of a kinetic phosphorescence analysis system developed by Northwest Laboratory under DOE sponsorship that allows for less frequent, more precise evaluation of uranium in urine.

- At Fernald, radiological contamination compounds were established to provide physical barriers around areas of known contamination. This funded capital project provides a number of trailer complexes that incorporate men's and women's change areas and break areas at the compound entrances, modular change areas in some facilities, and installation of fencing for defining contamination areas.

- FERMCO considers that the ability to stop the spread of contamination from within the compounds will be greatly enhanced by the construction of discrete satellite work stations for radiological technicians and construction/maintenance personnel inside each compound. This will allow routine activities for each group inside these areas without taking contaminated equipment outside the facilities for repair, calibration, cleaning, etc. By providing adequate equipment, work space, and utilities, affected personnel can increase efficiency as well. A study was performed to determine materials and labor for completion. Materials have been purchased, and installation of a centralized tool station and issue facility is in progress. Satellite tool lockers have been procured for tool storage in active contaminated areas.

- At Fernald, a computerized access control system has been developed and installed in several locations. This system ensures that personnel entering radiologically-controlled areas have been appropriately trained and are participating in required dosimetry programs. This is accomplished by electronically searching training and dosimetry files of every individual prior to permitting access to such areas.

- At Idaho, ICPP, a computer program was developed to aid in meeting requirements of Articles 311 and 312. The program is called Radiological Evaluation Decision Input (REDI). This software is a decision tree program that allows someone without a strong radiological background (i.e., planners) to develop radiological input to work control procedures. It asks questions such as "What is the radiation, contamination, and airborne in the area?," and then prints predetermined requirements for that category.

- At INEL, significant instrument upgrades have been made to enhance ability to protect personnel and environment.

- EG&G Idaho (now LMIT) organized a Health Physics Instrument Committee with large DOE contractor participation which is now actively working toward

standardization of instruments and calibration techniques at all DOE sites.

- At WVDP, personnel dosimeter badges were modified to include a picture of the individual for identification. This reduced the time expected for searches conducted by the dosimetry office and reduced the number of special dose evaluations conducted when badges are worn by the wrong individuals in radiological areas. The total savings demonstrated by this effort was estimated at about $15,000 for a three-year interval.

- At WVDP, the extremity dosimeter program was revised and contracted out to the dosimetry service laboratory. Previously, extremity badges were processed onsite by using manual equipment that was becoming outdated and labor intensive. Again, by this subcontracting, a saving totaling about $24,000 over a three-year period is expected.

- K-25 has installed an electronic Radiological Work Permit that provides consistency and saves time. The system uses a badge reader and eventually will be used to schedule the worker's bioassay program.

- At CEBAF, a computerized dose tracking database which will store dosimetry data and do limited analysis and report generation is being functionally tested.

- The Richland, Nevada, and Idaho contractors' Radiological Control Program managers meet at least monthly to address site-specific policy and issues with regard to the Department of Energy Radiological Control Manual. This helps achieve cost savings through standardization.

- Rocky Flats has developed a computer database for tracking and documenting compliance to all of the Manual's requirements. This database was updated to reflect the inclusion of 10 CFR 835 requirements and changes from Revision 1 of the Radiological Control Manual.

- At Rocky Flats, the Radiological Work Permits (RWP) were upgraded throughout Radiation Protection Organization. Computers were purchased for all the RWP Work Stations and a database was developed to reflect the RWP form. The database is currently in the process of being tested and validated, and local area network connections are in the process of being installed.

- The Pacific Northwest Laboratory has developed a computer program to generate radiological survey maps for use in documenting routine and special radiological surveys.

- Pacific Northwest Laboratories publishes a monthly radiation worker newsletter which emphasizes proper procedures and practices as well as radiological control lessons learned.

- The Westinghouse Savannah River Company estimates that $650,000 in saving resulted from utilization of the self-study packages when compared to the cost of traditional classroom presentations for radiological training.

- The WHC developed and internally approved a statistical radiological release methodology.

- The WHC developed several programs: temporary shielding, fixed contamination area, and hot particle control.

4. Present Status of the Radiological Control Manual

DOE Notice 5480.10 that issued Revision 1 of the Radiological Control Manual, and which expired in January 1995, was renewed for another year (via DOE Notice 5480.11), time in which the Office of Environment, Safety, and Health will formally integrate the Radiological Control Manual into the Departmental Directive System. Presently, the Office of Environment, Safety, and Health prepared the second revision of the Manual meant to highlight those requirements that stem from 10 CFR 835 and DOE Order 5480.11 and to provide a greater flexibility in implementing these requirements. The status of the Radiological Control Manual as a mandatory document is being evaluated as part of the Environment, Safety and Health order revision process.

Table I

General View of the DOE Site-Specific Radiological Control Manual Implementation Plans
Part 1: General Information

			Lead SO	Programmatic responsibilities DP	EM	ER	NE	NN	RW	Sites with facilities under the DNFSB jurisdiction	The date of RCMIP presently available at the central collection	RCM Revision reflected in 1994 report	Abbreviation
AL	**Albuquerque Operations Office**												
1	Grand Junction Projects		EM		O						11/19/93	Rev. 1	GJPO
2	Inhalation Toxicology Research Institute		ER		O	O					11/30/93	Rev. 0	ITRI
3	Kansas City Plant		DP	O	O						12/10/93	Rev. 0	KCP
4	Los Alamos National Laboratory		DP	O	O	O	O			Y	12/01/93		LANL
5	Pantex Plant		DP	O	O					Y	09/24/93	Rev. 1	PANTEX
6	Pinellas Plant	@@	DP	O	O					Y	12/09/93	Rev. 1	PINELLAS
7	Ross Aviation		DP	O								Rev. 1	ROSS
8	Sandia National Laboratories		DP	O	O	O	O			Y	12/01/93		SNL
9	Transportation Safeguards Division		DP	O							11/24/93	Rev. 1	TSD
10	Uranium Mill Tailings Remedial Action Project		EM		O						12/28/93	Rev. 0	UMTRA
11	Waste Isolation Pilot Plant		EM		O					Y	12/28/93	Rev. 1	WIPP
CH	**Chicago Operations Office**												
12	Ames Laboratory		ER		O	O						Rev. 0	AMES
13	Argonne National Laboratory - East		ER		O	O	O					Rev. 1	ANLE
14	Argonne National Laboratory - West		NE		O		O						ANLW
15	Battelle Columbus Laboratories	@@@@	EM		O						11/08/93		BCL
16	Brookhaven National Laboratory		ER		O	O	O				09/30/92		BNL
17	Environmental Measurements Laboratory		ER		O	O						Rev. 0	EML
18	Fermi National Accelerator Laboratory		ER		O	O						Rev. 0	FNAL
19	New Brunswick Laboratory		NN		O			O				Rev. 0	NBL
20	Notre Dame Radiation Laboratory		ER			O						Rev. 0	NDRL
21	Princeton Plasma Physics Laboratory		ER		O	O							PPPL
ID	**Idaho Operations Office**												
22	INEL - BWI (SMC)	@@@	DP	O						Y	12/07/93	Rev. 1	B&WI
23	INEL - EGG	@@@	EM		O	O	O			Y	12/10/93	Rev. 1	EGG
24	INEL - GOID (RESL)		EM		O						01/03/94	Rev. 1	RESL
25	INEL - MKF	@@@	EM		O					Y	12/31/93	Rev. 1	MKF
26	INEL - PTI	@@@	EM		O					Y	12/15/93	Rev. 1	PTI
27	INEL - WINCO (ICPP)	@@@	EM		O					Y	12/23/93	Rev. 1	WINCO

NV Nevada Operations Office

28	Nevada Test Site / Yucca Mountain Project		DP	O	O			O	Y	11/30/93 @		NTSYM

OH Ohio Field Office

29	Fernald Environmental Management Project		EM		O				Y	01/09/95	Rev. 1	FERNALD
30	Mound Plant	@@	DP	O	O		O		Y	11/23/93	Rev. 1	MOUND
31	West Valley Demonstration Project		EM		O				Y	12/15/93	Rev. 1	WVDP

OK Oakland Operations Office

32	Energy Technology Engineering Center		EM		O		O			12/03/93	Rev. 0	ETEC
33	Laboratory for Energy-Related Health Research		EM		O					12/30/93	Rev. 0	LEHR
34	Lawrence Berkeley Laboratory		ER		O	O					Rev. 0	LBL
35	Lawrence Livermore National Laboratory		DP	O	O	O	O		Y	11/29/93 @	Rev. 1	LLNL
36	Stanford Linear Accelerator Center		ER		O	O					Rev. ?	SLAC

OR Oak Ridge Operations Office

37	Continuous Electron Beam Accelerator		ER			O				08/27/93 @	Rev. 0	CEBAF
38	Formerly Utilized Sites Remedial Action Program		EM		O					06/11/93	Rev. 1	FUSRAP
39	MK-Ferguson of Oak Ridge		EM	O	O				Y	10/05/93	Rev. 0	MKF
40	Oak Ridge Gaseous Diffusion Plant (K-25)		EM		O		O		Y	12/20/93	Rev. 0	K25
41	Oak Ridge Institute for Science and Education		ER		O	O				08/10/92	Rev. 0	ORISE
42	Oak Ridge National Laboratory		ER		O	O	O		Y	08/15/93	Rev. 0	ORNL
43	Oak Ridge Y-12 Plant		DP	O	O	O			Y	07/29/93 @	Rev. 0	Y12
44	Paducah Gaseous Diffusion Plant		NE		O		O					PADUCAH
45	Portsmouth Gaseous Diffusion Plant		NE		O		O					PORTSMOU
46	Weldon Spring Site Remedial Action Project		EM		O					01/15/93 @	Rev. 0	WSSRAP

RF Rocky Flats Field Office

47	Rocky Flats Plant		EM	O	O				Y	04/01/93 @	Rev. 1	RFETS

RL Richland Operations Office

48	Hanford Site - HEHF		EM		O				Y	04/07/95 @	Rev. 1	HEHF
49	Hanford Site - PNL		ER		O	O			Y	04/07/95 @	Rev. 1	PNL
50	Hanford Site - WHC		EM	O	O		O		Y	04/07/95 @	Rev. 1	WHC

SR Savannah River Operations Office

51	Savannah River Site		EM	O	O	O	O		Y	09/09/94 @	Rev. 1	SRS

@ This symbol shows that the RCMIP is a controlled document.

@@ Pinellas and Mound were transitioned to EM in June 1995.

@@@ On June 1, 1995, Lockeed Martin Idaho Technologies consolidated the five RCMIPs for the previous INEL contractors (BWI, EGG, MKF, PTI and WINCO). Data included in this Table will be revised accordingly for the 1995 annual report.

@@@@ BCL is in transition to Ohio Field Office.

General View of the DOE Site-Specific Radiological Control Manual Implementation Plans

Part 2: Implementation Status as of 12/31/94

Percent of Articles in full compliance

Notations: F full compliance
N/A not applicable

		10/92			By 10/1/93			By 12/31/93			By 12/31/94			Projected compliance at 12/31/96 based on data. Additional Articles becoming F in 1995	
		Number of Articles			Number of Articles			Number of Articles			Number of Articles				
		N/A	F	%	N/A	F	%	N/A	F	%	N/A	F	%		%
AL	**Albuquerque Operations Office**														
1	GJPO	6	44	25	6	155	87	6	155	87	7	149	84	28	100
2	ITRI	17	40	24	17	107	64	17	56	34	24	53	33	30	52
3	KCP	46	103	75	46	135	98	46	134	97					
4	LANL	6	74	42	6	87	49	6	101	57	6	85	48	52	77
5	PANTEX	19	40	24	19	71	43	15	94	56	16	91	54	60	90
6	PINELLAS	25	116	73	25	136	86	32	128	84	26	158	100	0	100
7	ROSS										95	40	45	49	100
8	SNL	8	21	12	8			10	62	36	10	87	50	12	57
9	TSD	45	26	19	45	74	53	70	74	65	78	85	80	21	100
10	UMTRA	15	128	76	15	141	83	19	120	73	25	157	99	2	100
11	WIPP	29	74	48	29	121	78	30	144	94	28	155	99	0	99
CH	**Chicago Operations Office**														
12	AMES							16	119	71	14	119	70	51	100
13	ANLE							6	171	96	6	178	100	0	100
14	ANLW	6	119	67	6	145	81	6	141	79	6	170	92	8	100
15	BCL	6	137	77				6	163	92					
16	BNL	10	36	21	10	93	53	10	71	41	10	105	61	60	96
17	EML							42	72	51	40	76	53	68	100
18	FNAL							19	86	52	19	128	78	37	100
19	NBL							20	98	60	20	98	60		
20	NDRL							85	96	97	85	96	97	3	100
21	PPPL							6	0	0					
ID	**Idaho Operations Office**														
22	B&WI							22	51	31	6	177	99	1	100
23	EGG	14			14	134	79	14	139	82	14	149	88	11	94
24	RESL	22	112	69	22	123	76	25	129	81	6	167	94	11	100
25	MKF	49	125	93	49	134	99	49	134	99	47	136	98	1	100
26	PTI	39	9	6	39	52	36	39	51	35	95	88	99	1	100
27	WINCO	16	104	62	16	126	75	16	130	77	16	151	90	17	100

NV Nevada Operations Office

28	NTSYM	14	18	11	14	25	15	15	67	40	12	108	63	32	81

OH Ohio Field Office

29	FERNALD	15	34	20	15	86	51	15	133	79	20	148	90	9	96
30	MOUND	11	77	45	11	120	69	11	87	50	13	84	49	67	88
31	WVDP	19	82	50	19	165	100	19	165	100	6	112	63	66	100

OK Oakland Operations Office

32	ETEC	14	33	19	14	38	22	14	147	86	14	147	86	11	93
33	LEHR	18	103	62	18	132	80	18	112	67	17	75	45	92	100
34	LBL										20	87	53	63	91
35	LLNL	8	87	49				8	98	56	8	128	73		
36	SLAC										6	48	27	130	100

OR Oak Ridge Operations Office

37	CEBAF	13	82	48	13	92	54	14	109	64	13	111	65	60	100
38	FUSRAP	30	104	68	30	125	81	29	128	83	29	147	95	8	100
39	MKF	6	3	2	6	3	2	12	51	30	11	171	99	2	100
40	K25	16	14	8	16	51	30	15	32	19	16	49	29	112	96
41	ORISE	6	153	86	6	178	100	7	159	90	16	162	96	6	100
42	ORNL	16	39	23	16	51	30	16	74	44	16	73	43	62	80
43	Y12	19	34	21	19	34	21	18	36	22	14	52	31	73	74
44	PADUCAH														
45	PORTSMOUTH														
46	WSSRAP	23			23	87	54	31	93	61	31	140	92	13	100

RF Rocky Flats Field Office

47	RFETS	7	32	18	7	36	20	7	31	18	7	32	18	118	86

RL Richland Operations Office

48	HEHF	56	33	26	56	118	92	56	124	97	56	127	99	1	100
49	PNL	8	109	62	8	147	84	8	166	94	7	113	64	41	87
50	WHC	8	118	67	8	129	73	11	120	69	11	137	79	36	100

SR Savannah River Operations Office

51	SRS	10	48	28	10	125	72	10	142	82	11	112	65	59	99

Average (%)	**42**	**63**	**65**	**72**	**94**

General View of the DOE Site-Specific Radiological Control Manual Implementation Plans

Part 3: Implementation Schedule at 12/31/94

		As of 10/1/93		As of 12/31/93		As of 12/31/94	
		Date for full compliance	Date for compliance w Chapter 6 (Training)	Date for full compliance	Date for compliance w Chapter 6 (Training)	Date for full compliance	Date for compliance w Chapter 6 (Training)
AL	**Albuquerque Operations Office**						
1	GJPO	06/01/94	06/01/94	06/01/94	06/01/94	12/29/95	12/29/95
2	ITRI	12/31/96	12/31/96	08/01/97	12/31/96	08/01/97	12/31/96
3	KCP	06/01/94	06/01/94	12/30/94	12/30/94		
4	LANL	09/01/97	06/11/96	10/01/96	10/01/96	10/01/96	10/01/96
5	PANTEX	12/31/95	12/01/94	10/31/96	10/31/96	10/31/96	06/30/96
6	PINELLAS	10/30/93	10/30/93	06/01/94	06/01/94	Compliance	Compliance
7	ROSS					11/30/95	06/30/95
8	SNL	NG	NG	10/31/96	10/31/96	12/01/96	12/01/96
9	TSD	NG	NG	12/01/94	12/01/94	07/31/95	06/30/95
10	UMTRA	06/01/94	06/01/94	12/31/95	12/31/95	09/01/95	09/01/95
11	WIPP	04/01/94	12/01/93	04/01/94	03/01/94	10/01/96	Compliance
CH	**Chicago Operations Office**						
12	AMES			01/01/96	07/01/94	12/31/95	12/31/95
13	ANLE			12/01/96	12/01/94	03/30/95	03/30/95
14	ANLW	06/30/96	12/31/94	06/30/96	06/01/95	12/31/95	06/01/95
15	BCL	NG	NG	NG	NG		
16	BNL	10/01/97	06/30/95	10/01/97	06/30/95	10/01/97	12/31/95
17	EML			06/01/94	06/01/94	12/31/95	06/30/95
18	FNAL			10/01/97	10/01/95	01/01/96	01/01/96
19	NBL			12/01/96	02/16/94	12/01/96	02/16/94
20	NDRL			12/31/95		12/31/95	12/31/95
21	PPPL					12/31/96	12/31/96
ID	**Idaho Operations Office**						
22	B&WI	10/28/93	10/20/93	06/30/95	11/30/94	12/31/95	Compliance
23	EGG	12/31/96	12/01/94	10/01/96	12/01/94	[illegible]/01/96	10/01/96
24	RESL	06/01/94	06/01/94	02/01/96	06/01/94	12/31/95	12/31/95
25	MKF	01/01/94	compliance	01/01/94	12/01/93	Compliance	Compliance
26	PTI	12/31/93	12/31/93	12/31/94	12/31/94	12/31/95	12/31/95
27	WINCO	01/01/96	06/01/94	01/01/96	06/01/94	12/31/95	Compliance

NV Nevada Operations Office

28	NTSYM	12/01/95	12/01/95	09/30/96	12/31/94	12/01/96	10/01/96

OH Ohio Field Office

29	FERNALD	06/01/94	06/01/94	07/31/95	12/01/94	07/01/96	07/01/96
30	MOUND	12/31/96	06/01/95	09/30/96	09/01/95	09/30/97	09/30/97
31	WVDP	07/16/93	07/01/93	07/16/93	07/01/93	07/01/95	04/01/95

OK Oakland Operations Office

32	ETEC	NG	NG	02/19/96	02/19/96	02/19/96	02/19/96
33	LEHR	12/01/93	12/01/93	06/30/94	04/30/94	12/31/95	12/31/95
34	LBL					12/01/96	12/01/96
35	LLNL	NG	NG	NG	NG	NG	NG
36	SLAC					12/31/95	12/31/95

OR Oak Ridge Operations Office

37	CEBAF	09/30/94	09/30/94	09/30/94	09/30/94	09/30/95	09/30/95
38	FUSRAP	04/01/94	01/01/94	12/31/94	12/31/94	12/31/95	compliance
39	MKF	06/01/94	06/01/94	06/30/94	06/30/94	04/30/95	04/30/95
40	K25	09/09/99	12/01/95	10/01/96	12/01/94	09/30/96	09/30/96
41	ORISE	12/31/92	12/31/92	12/31/94	12/31/94	03/31/95	03/31/95
42	ORNL	10/01/96	06/01/94	10/01/96	12/31/94	10/01/96	10/01/96
43	Y12	09/30/96	08/31/95			06/30/96	06/30/96
44	PADUCAH						
45	PORTSMOUTH						
46	WSSRAP	06/01/94	06/01/94	06/01/94	06/01/94	04/30/95	04/30/95

RF Rocky Flats Field Office

47	RFETS	12/01/96	09/01/95	12/01/96	09/01/95	10/01/96	03/16/96

RL Richland Operations Office

48	HEHF	04/01/95	06/01/94	04/01/95	06/01/94	04/01/95	compliance
49	PNL	04/01/95	06/01/94	04/01/95	03/31/94	10/31/96	10/31/96
50	WHC	04/01/95	12/31/94	04/01/95	12/31/94	12/31/95	03/31/95

SR Savannah River Operations Office

51	SRS	09/09/99	12/31/93	09/30/96	10/31/94	09/30/96	09/01/95

General View of the DOE Site-Specific Radiological Control Manual Implementation Plans

Part 4: Implementation Cost (real or projected) as of 12/31/94

		10/1/93 Total, for four years 1993-1996	12/31/93 Total, for four years 1993-1996	12/31/94 Total, for 1993-1996 and beyond	Total spent by 1/1/95	Total to be spent in the last 3Q of FY1995	Total for FY 1996 and beyond
AL	**Albuquerque Operations Office**						
1	Grand Junction Projects	2.21	2.21	2.21	2.21	0.00	0.00
2	Inhalation Toxicology Research Institute	1.09	1.07	1.07	0.09	0.09	0.89
3	Kansas City Plant	0.39	0.00	0.00			
4	Los Alamos National Laboratory	89.02	35.08	25.08	8.16	1.91	15.01
5	Pantex Plant	4.35	1.73	1.73	0.38	0.22	1.13
6	Pinellas Plant	0.86	0.00	0.00	0.00	0.00	0.00
7	Ross Aviation			0.04	0.03	0.01	0.00
8	Sandia National Laboratories	8.87	13.68	13.68	2.55	1.29	9.75
9	Transportation Safeguards Division	1.43	0.02	0.02	0.01	0.01	0.00
10	Uranium Mill Tailings Remedial Action Project	8.75	4.93	3.41	3.28	0.14	0.00
11	Waste Isolation Pilot Plant	0.00	0.00	0.00	0.00	0.00	0.00
CH	**Chicago Operations Office**						
12	Ames Laboratory	0.01	0.12	0.12	0.05	0.04	0.03
13	Argonne National Laboratory - East	0.60	4.05	4.05	0.03	0.03	0.03
14	Argonne National Laboratory - West	0.39	0.39	0.39	0.39	0.00	0.00
15	Battelle Columbus Laboratories	1.09	1.09	1.09			
16	Brookhaven National Laboratory	2.52	2.36	2.36	1.80	0.20	0.36
17	Environmental Measurements Laboratory	0.20	0.12	0.12			
18	Fermi National Accelerator Laboratory	5.40	2.24	2.24			
19	New Brunswick Laboratory	0.10	0.10	0.20			
20	Notre Dame Radiation Laboratory	0.00		0.01			
21	Princeton Plasma Physics Laboratory	0.20	0.80	0.80			
ID	**Idaho Operations Office**						
22	INEL - BWI (SMC)	0.39	0.30	0.00	0.00	0.00	0.00
23	INEL - EGG	9.67	9.67	8.92	5.82	1.08	2.02
24	INEL - GOID (RESL)	1.12	1.12	0.00	0.00	0.00	0.00
25	INEL - MKF	0.15	0.15	0.15	0.15	0.00	0.00
26	INEL - PTI	0.30	0.29	0.60	0.60	0.00	0.00
27	INEL - WINCO (ICPP)	2.22	2.22	2.22	1.70	0.17	0.35

NV Nevada Operations Office

28 –	Nevada Test Site / Yucca Mountain Project	10.00	4.75	4.75		4.18	0.14	0.44

OH Ohio Field Office

29	Fernald Environmental Management Project	15.70	19.01	19.01	*	14.61	4.26	0.14
30	Mound Plant	7.84	2.93	2.93		0.00	0.59	2.33
31	West Valley Demonstration Project	0.19	0.19	0.19		0.05	0.14	0.00

OK Oakland Operations Office

32	Energy Technology Engineering Center	3.35	0.49	0.49				
33	Laboratory for Energy-Related Health Research	0.78	0.86	0.86		0.27	0.41	0.19
34	Lawrence Berkeley Laboratory	6.60		8.42		3.41	2.55	2.47
35	Lawrence Livermore National Laboratory	17.05	15.98	15.98	**			
36	Stanford Linear Accelerator Center	1.10		1.55		0.00	1.23	0.32

OR Oak Ridge Operations Office

37	Continuous Electron Beam Accelerator	0.00	0.85	0.85		0.27	0.58	0.00
38	Formerly Utilized Sites Remedial Action Program	0.36	0.36	0.36		0.35	0.01	0.00
39	MK-Ferguson of Oak Ridge	3.20	7.36	12.46		12.37	0.09	0.00
40	Oak Ridge Gaseous Diffusion Plant (K-25)	15.03	12.06	10.70		1.23	8.41	1.06
41	Oak Ridge Institute for Science and Education	0.49	0.49	0.49		0.47	0.02	0.00
42	Oak Ridge National Laboratory	29.40	30.88	11.74		1.39	1.42	8.92
43	Oak Ridge Y-12 Plant	20.80	20.81	20.81		9.04	3.96	7.80
44	Paducah Gaseous Diffusion Plant							
45	Portsmouth Gaseous Diffusion Plant							
46	Weldon Spring Site Remedial Action Project	1.13	1.13	1.09		0.78	0.32	0.00

RF Rocky Flats Field Office

47	Rocky Flats Plant	24.71	24.71	24.71		7.38	5.83	11.50

RL Richland Operations Office

48	Hanford Site - HEHF	0.00	0.00	0.00	*	0.00	0.00	0.00
49	Hanford Site - PNL	4.07	4.31	4.31	*	3.79	0.08	0.43
50	Hanford Site - WHC	10.19	4.56	5.56	*	3.76	1.29	0.51

SR Savannah River Operations Office

51	Savannah River Site	5.02	5.00	5.00		4.45	0.52	0.03
	Total (M)	**318**	**240**	**223**		**95**	**37**	**66**
	Number of RCMIPs in Total	47	44	48		39	39	39

* Total cost is given for 1995-1997.

** The LLNL cost includes FTEs, at $100,000 per FTE.

General View of the DOE Site-Specific Radiological Control Manual Implementation Plans

Part 5: Core Academic Training as of 12/31/94

		GERT			RW I			RW II			RCT		
		Number of persons			Number of persons			Number of persons			Number of persons		
		Requiring training	Trained to date	%	Requiring training	Trained to date	%	Requiring training	Trained to date	%	Requiring training	Trained to date	%
AL	**Albuquerque Operations Office**												
1	GJPO	606	606	100	60	60	100	925	925	100	28	28	100
2	ITRI	198	198	100	98	98	100	6	6	100	1	0	0
3	KCP	–	–		118	118	100	–	–		2	2	100
4	LANL &&	8730	8730	100	1753	1753	100	3018	3018	100	127	66	52
5	PANTEX	2477	2477	100	493	493	100	1003	1003	100	39	39	100
6	PINELLAS	500	500	100	8	8	100	140	140	100	–	–	
7	ROSS												
8	SNL &&	8400	8400	100	1196	550	46	231	210	91	41	27	66
9	TSD	320	288	90	8	0	0	–	–		–	–	
10	UMTRA	8	8	100	–	–		900	225	25	100	65	65
11	WIPP	814	814	100	–	–		9	9	100	3	3	100
CH	**Chicago Operations Office**												
12	AMES	35	0	0	–	–		130	130	100	2	0	0
13	ANLE	3800	3000	79	1176	1035	88	567	456	80	50	41	82
14	ANLW	189	184	97	202	192	95	544	532	98	33	17	52
15	BCL												
16	BNL	1525	225	15	3000	500	17	1000	270	27	28	0	0
17	EML	85	50	59	10	6	60	8	0	0	–	–	
18	FNAL	859	859	100	1050	500	48	1160	651	56	11	0	0
19	NBL	6	6	100	9	9	100	31	31	100	3	2	67
20	NDRL	7	1	14	–	–		22	14	64	–	–	
21	PPPL	780	690	88	400	244	61	39	39	100	9	7	78
ID	**Idaho Operations Office**												
22	B&WI	94	94	100	30	30	100	225	225	100	9	9	100
23	EGG	1628	1628	100	485	485	100	1162	1162	100	63	63	100
24	RESL	285	285	100	48	48	100	22	22	100	–	–	
25	MKF	&	110		&	172		&	733		&	0	
26	PTI	88	88	100	307	307	100	–	–		–	–	
27	WINCO	1971	1971	100	466	466	100	994	994	100	54	54	100

NV Nevada Operations Office

28	NTSYM &&	5000	5000	100	250	250	100	500	500	100	45	12	27

OH Ohio Field Office

29	FERNALD	5703	5703	100	1053	1053	100	2847	2847	100	123	123	100
30	MOUND	600	400	67	–	–		730	190	26	44	0	0
31	WVDP	980	980	100	450	450	100	723	723	100	38	38	100

OK Oakland Operations Office

32	ETEC	–	–		45	45	100	54	54	100	7	0	0
33	LEHR	17	17	100	6	6	100	11	11	100	–	–	
34	LBL	3300	651	20	600	300	50	0	0		7	0	0
35	LLNL	9000	9000	100	2000	2000	100	200	116	58	37	0	0
36	SLAC	1160	863	74	424	406	96	115	115	100	13	0	0

OR Oak Ridge Operations Office

37	CEBAF	155	155	100	487	487	100	–	–		1	0	0
38	FUSRAP	80	80	100	–	–		150	99	66	35	25	71
39	MKF	2200	2200	100	–	–		1255	1255	100	9	7	78
40	K25 &&	2995	2995	100	–	–		1800	1800	100	129	125	97
41	ORISE	87	87	100	35	32	91	16	16	100	1	1	100
42	ORNL	5000	5000	100	200	200	100	1000	1000	100	106	106	100
43	Y12	3050	3050	100	–	–		1548	1548	100	79	79	100
44	PADUCAH												
45	PORTSMOUTH												
46	WSSRAP	900	875	97	–	–		490	225	46	–	–	

RF Rocky Flats Field Office

47	RFETS	2288	656	29	2500	99	4	2500	678	27	410	238	58

RL Richland Operations Office

48	HEHF	175	175	100	8	8	100	30	30	100	–	–	
49	PNL &&&	257	257	100	389	389	100	821	821	100	54	54	100
50	WHC &&&	13137	13137	100	110	110	100	3539	3539	100	400	367	92

SR Savannah River Operations Office

51	SRS	20500	20500	100	1000	1000	100	13229	13229	100	338	337	100
Total		**109989**	**102993**		**20474**	**13909**		**43694**	**39591**		**2479**	**1935**	
Average %				**87**			**85**			**84**			**62**

& Did not indicate whether "Trained" or "To be Trained".

&& Employees operating defence nuclear facilities are fully trained.

&&& Changes in status, new hires, and terminations affect the validity of the baseline and percentages.

General View of the DOE Site-Specific Radiological Control Manual Implementation Plans

Part 6: Radiological Control Managers

		Radiological Control Manager	Tel	Fax		Location
AL	**Albuquerque Operations Office**	Gene Runkle	(505) 845-5087	(505) 845-6195		
1	Grand Junction Projects	Michael Sandvig	(303) 248-6712	(303) 248-6040	CO	Grand Junction
2	Inhalation Toxicology Research Institute	Stephen Rohrer	(505) 845-1049	(505 845-1198	NM	Albuquerque
3	Kansas City Plant	Mary Donahue	(816) 997-7179	(816) 997-5903	MO	Kansas City
4	Los Alamos National Laboratory	Dr. Joe Graf	(505) 667-5296	(505) 667-9726	NM	Los Alamos
5	Pantex Plant	Roby Enge	(806) 477-4435	(806) 477-4198	TX	Amarillo
6	Pinellas Plant	Adam Weaver	(813) 541-8130	(813) 541-8909	FL	Largo
7	Ross Aviation	Jerome Feery	(505) 845-5040	(505) 845-5023	NM	Albuquerque
8	Sandia National Laboratories	Ross Miller	(805) 844-6806	(505) 844-6808	NM	Albuquerque
9	Transportation Safeguards Division	Rich Richey	(505) 845-5886	(505) 845-4720	NM	Albuquerque
10	Uranium Mill Tailings Remedial Action Project	John Coffman	(505) 845-5868	(505) 766-1813	NM	Albuquerque
11	Waste Isolation Pilot Plant	Dave Kump	(505) 234-8468	(505) 885-4562	NM	Carlsbad
CH	**Chicago Operations Office**	Chuck Mansfield	(708) 252-2271	(708) 252-2836		
12	Ames Laboratory	Lowell Mathison	(515) 294-2153	(515) 294-2155	IA	Ames
13	Argonne National Laboratory - East	Robert Wynveen	(708) 252-3325	(708) 252-5778	IL	Argonne
14	Argonne National Laboratory - West	Debra Kirchner	(208) 533-7700	(208) 533-7344	ID	Idaho Falls
15	Battelle Columbus Laboratories	Steve Layendecker	(614) 424-3885	(614) 424-3954	OH	Columbus
16	Brookhaven National Laboratory	Robert Casey	(516) 282-4654	(516) 282-2618	NY	Upton
17	Environmental Measurements Laboratory	Matthew Williamson	(212) 620-3793	(212) 620-3600	NY	New York
18	Fermi National Accelerator Laboratory	J. Donald Cossairt	(708) 840-3390	(708) 840-3390	IL	Batavia
19	New Brunswick Laboratory	Margaret Lachman	(708) 252-2492	(708) 252-6256	IL	Argonne
20	Notre Dame Radiation Laboratory	John Bentley	(219) 631-6117	(219) 631-8068	IN	South Bend
21	Princeton Plasma Physics Laboratory	Jerry Gilbert	(609) 243-3455	(609) 243-2525	NJ	Princeton
ID	**Idaho Operations Office**	Ken Whitham	(208) 526-4151	(208) 526-7245		
22	INEL - BWI (SMC)	Larrie Trent	(208) 526-9132	(208) 526-6361	ID	Idaho Falls
23	INEL - EGG	Dr. James Barker	(208) 526-8621	(208) 526-8959	ID	Idaho Falls
24	INEL - GOID (RESL)	Ken Whitham	(208) 526-4151	(208) 526-7245	ID	Idaho Falls
25	INEL - MKF	Michael Findley	(208) 526-2769	(208) 526-2283	ID	Idaho Falls
26	INEL - PTI	Ralph Clayton	(208) 526-2314	(208) 526-2676	ID	Idaho Falls
27	INEL - WINCO (ICPP)	Thomas Pointer	(208) 526-5416	(208) 526-3787	ID	Idaho Falls

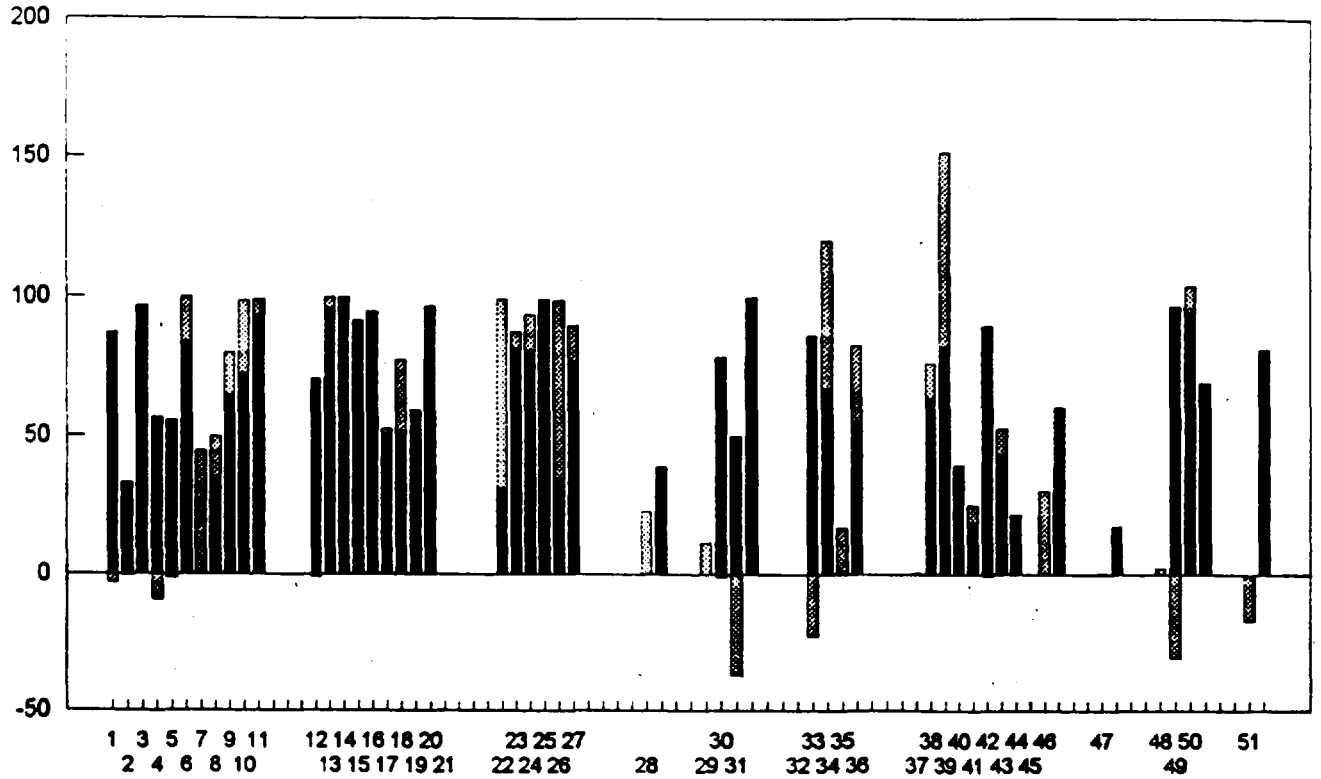
NV	**Nevada Operations Office**	Michael Marelli	(702) 295-0991	(702) 295-1202		
28	Nevada Test Site / Yucca Mountain Project	Tom Bastian	(702) 295-3515	(702) 295-6835	NV	Mercury
OH	**Ohio Field Office**	Jack Zimmerman	(513) 865-4640	(513) 865-4402		
29	Fernald Environmental Management Project	Mike Tester	(513)-738-6904	(513)738-9532	OH	Fernald
30	Mound Plant	Terry Vaughn	(513) 865-3437	(513) 865-4239	OH	Miamisburg
31	West Valley Demonstration Project	Mel Crotzer	(716) 942-2153	(716) 942-4246	NY	West Valley
OK	**Oakland Operations Office**	Robert Teets	(510) 637-1609	(510) 637-2001		
32	Energy Technology Engineering Center	Phil Rutherford	(818) 586-6140	(818) 586-6142	CA	Santa Susana
33	Laboratory for Energy-Related Health Research	Down Mitchell	(916) 752-4023	(916) 752-6918	CA	Davis
34	Lawrence Berkeley Laboratory	Roger Kloepping	(510) 486-7608	(510) 486-4776	CA	Berkeley
35	Lawrence Livermore National Laboratory	George Campbell	(510) 422-5217	(510) 422-3325	CA	Livermore
36	Stanford Linear Accelerator Center	Kenneth R. Kase	(415) 926-2045	(415) 926-3030	CA	Menlo Park
OR	**Oak Ridge Operations Office**	Mike Henderson	(615) 576-0705	(615) 576-3725		
37	Continuous Electron Beam Accelerator	Robert May	(804) 249-7682	(804) 249-7363	VA	Newport News
38	Formerly Utilized Sites Remedial Action Program	Ken Fleming	(615) 241-5666	(617) 576-4898	TN	Oak Ridge
39	MK-Ferguson of Oak Ridge	Laurence Friedman	(615) 574-7770	(615) 576-3741	TN	Oak Ridge
40	Oak Ridge Gaseous Diffusion Plant (K-25)	Jerry Jamison	(615) 574-9620	(615) 576-2999	TN	Oak Ridge
41	Oak Ridge Institute for Science and Education	Charles Scott	(615) 576-3335	(615) 576-7047	TN	Oak Ridge
42	Oak Ridge National Laboratory	John Swanks	(615) 574-8447	(615) 574-8225	TN	Oak Ridge
43	Oak Ridge Y-12 Plant	J.H. Barker	(615) 574-3547	(615) 574-1770	TN	Oak Ridge
44	Paducah Gaseous Diffusion Plant				KY	Paducah
45	Portsmouth Gaseous Diffusion Plant				OH	Portsmouth
46	Weldon Spring Site Remedial Action Project	Ken Meyer	(314) 441-8086	(314) 447-1122	MO	Weldon Spring
RF	**Rocky Flats Field Office**	Bruce Wallin	(303) 966-3096	(303) 966-4763		
47	Rocky Flats Plant	Mark Spears	(303) 966-6629	(303) 966-8123	CO	Denver
RL	**Richland Operations Office**	Danny Rice	(509) 373-7388	(509) 373-6100		
48	Hanford Site - HEHF	Sandra Gilchrist	(509) 376-6469	(509) 376-9156	WA	Richland
49	Hanford Site - PNL	David Higby	(509) 376-3057	(509) 376-6663	WA	Richland
50	Hanford Site - WHC	Denny Newland	(509) 372-3132	(509) 372-3522	WA	Richland
SR	**Savannah River Operations Office**	John Anderson	(803)-725-2042	(803)-725-7723		
51	Savannah River Site	Norman Mins	(803) 725-9716	(803) 725-7012	SC	Aiken

Figure 1

Radiological Control Manual Implementation Plans
Implementation status as of December 31, 1994

Implementation status in % of the applicable RCM Articles

light shade: progress in 1993 (RCM, Rev.0)
dark shade: progress in 1994 (RCM, Rev.0 or Rev.1)



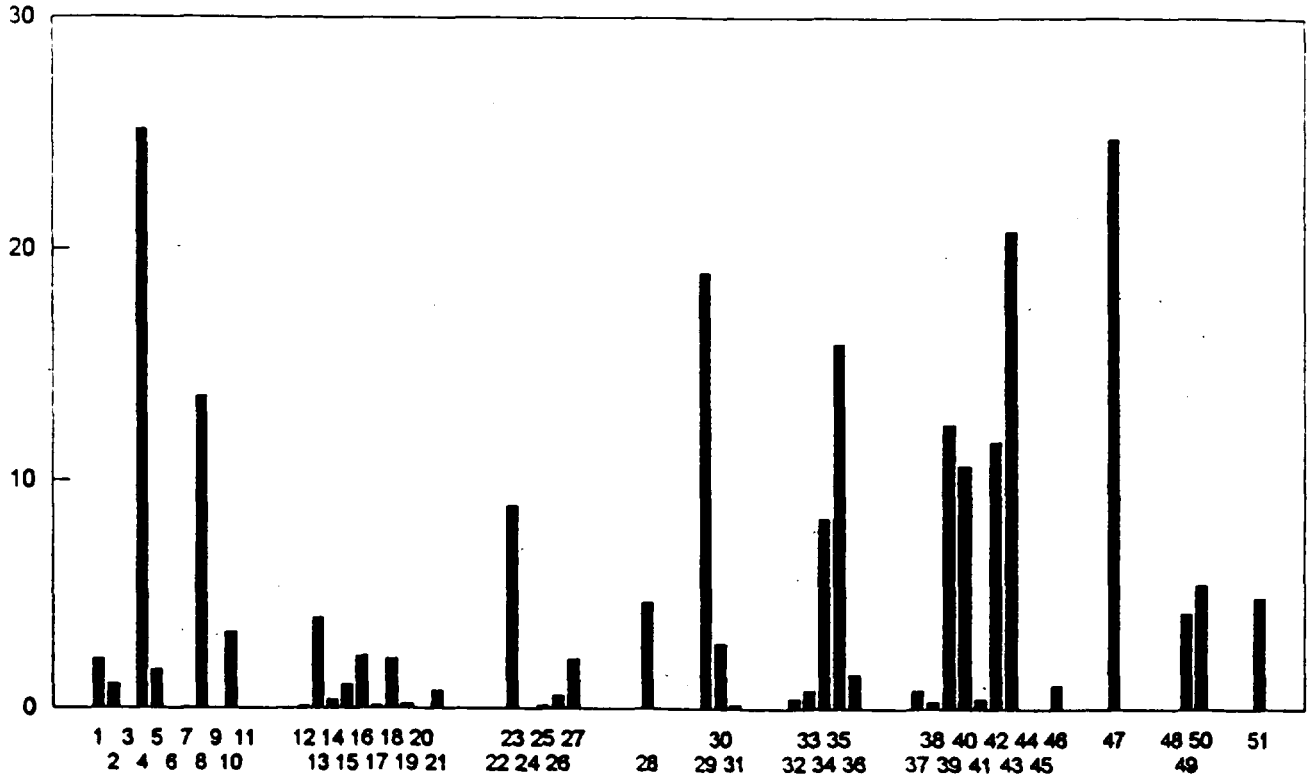
- o Negative values show the decrease in percent compliance due to new requirements introduced by the Rev. 1 or to more detailed assessments that indicated that more work is neede to reach full compliance.
- o For KCP, BCL and PPPL, the graph shows the implementation status as of 12/31/93

1	GJPO	18	FNAL	35	LLNL
2	ITRI	19	0	36	SLAC
3	KCP	20	NDRL	37	CEBAF
4	LANL	21	PPPL	38	FUSRAP
5	PANTEX	22	B&WI	39	MKF
6	PINELLAS	23	EGG	40	K25
7	ROSS	24	RESL	41	ORISE
8	SNL	25	MKF	42	ORNL
9	TSD	26	PTI	43	Y12
10	UMTRA	27	WINCO	44	PADUCAH
11	WIPP	28	NTSYM	45	PORTSMOUTH
12	AMES	29	FERNALD	46	WSSRAP
13	ANLE	30	MOUND	47	RFETS
14	ANLW	31	WVDP	48	HEHF
15	BCL	32	ETEC	49	PNL
16	BNL	33	LEHR	50	WHC
17	EML	34	LBL	51	SRS

Figure 2

Radiological Control Manual Implementation Plans
Implementation status as of December 31, 1994

Implementation cost in millions



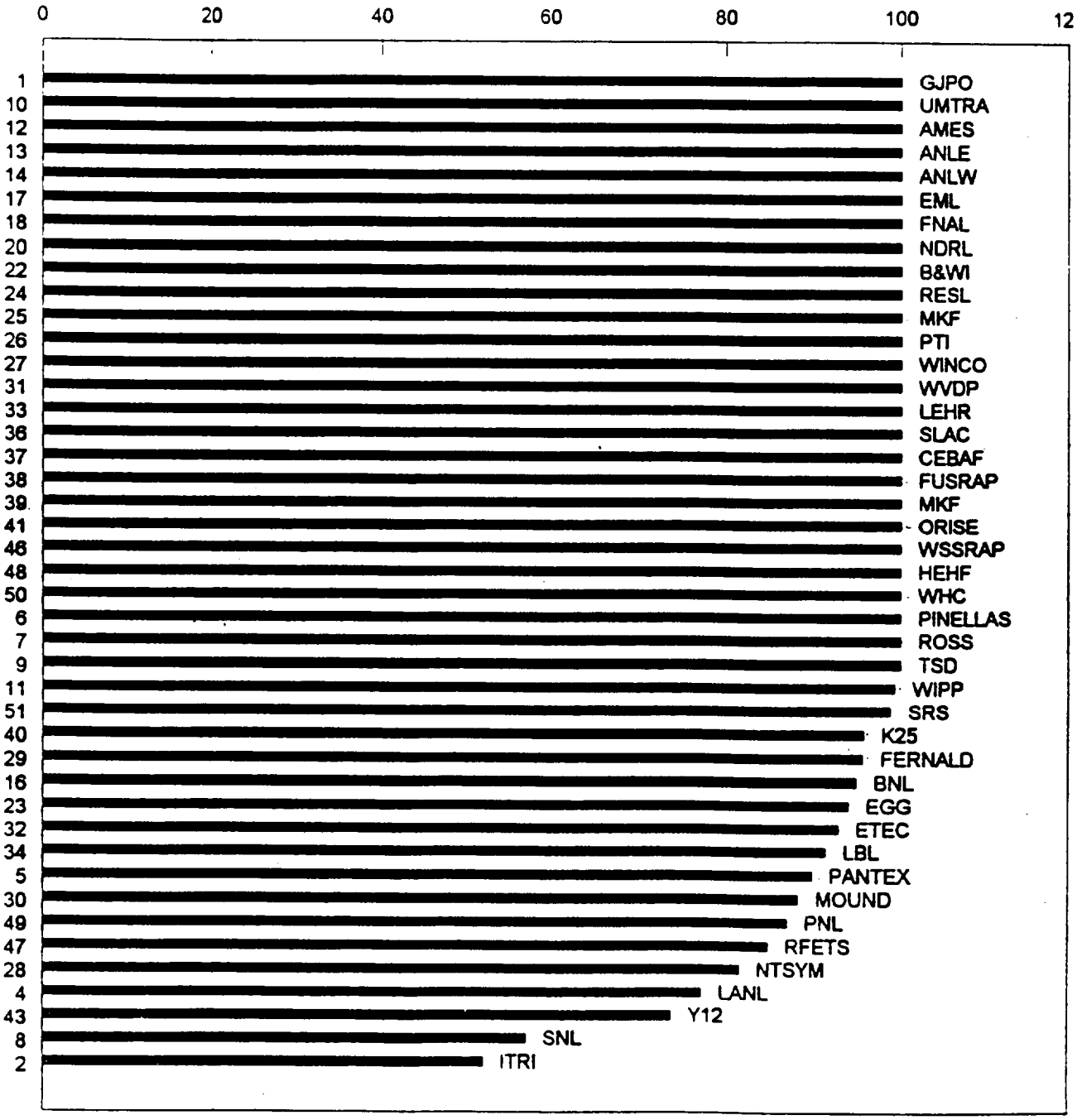
For KCP, BCL and PPPL, the graph shows the projections as of 12/31/93

1	GJPO	18	FNAL	35	LLNL
2	ITRI	19	NBL	36	SLAC
3	KCP	20	NDRL	37	CEBAF
4	LANL	21	PPPL	38	FUSRAP
5	PANTEX	22	B&WI	39	MKF
6	PINELLAS	23	EGG	40	K25
7	ROSS	24	RESL	41	ORISE
8	SNL	25	MKF	42	ORNL
9	TSD	26	PTI	43	Y12
10	UMTRA	27	WINCO	44	PADUCAH
11	WIPP	28	NTSYM	45	PORTSMOUTH
13	ANLE	30	MOUND	47	RFETS
14	ANLW	31	WVDP	48	HEHF
15	BCL	32	ETEC	49	PNL
16	BNL	33	LEHR	50	WHC
17	EML	34	LBL	51	SRS

Figure 3

Radiological Control Manual Implementation Plans
Implementation status projected for December 31, 1995

Implementation status in % of the applicable RMC Articles



Projections not available for the following sites: BCL, KCP, LLNL, NBL, PADUCAH, PORTSMOUTH, AND PPPL

Technical Equivalency Determinations (Article 113)
List for Department of Energy Sites

				RCM Article changed	RCM Article allowing this change (*)
1	1	AL	KCP	613	
2	2	AL	KCP	614	
3	1	AL	PANTEX	552	
4	2	AL	PANTEX	554	
5	1	AL	PINELLAS	346	
6	1	AL	UMTRA	222.6	371.9
7	2	AL	UMTRA	233	371.9
8	3	AL	UMTRA	316.6 b	371
9	4	AL	UMTRA	325.4	371.2
10	5	AL	UMTRA	335	113
11	6	AL	UMTRA	422	371.5
12	7	AL	UMTRA	461	371.2
13	8	CH	BNL	A 3C	113
14	1	CH	BNL	234.2	113
15	2	CH	BNL	312.3	113
16	3	CH	BNL	314.5	113
17	4	CH	BNL	315.3	113
18	5	CH	BNL	316.4	113
19	6	CH	BNL	316.5	113
20	7	CH	BNL	316.6	113
21	8	CH	BNL	322.8	113
22	9	CH	BNL	346.6	113
23	10	CH	BNL	347.2	113
24	11	CH	BNL	347.3	113
25	1	CH	EML	236.1	113
26	2	CH	EML	334.8	113
27	3	CH	EML	334.9	113
28	4	CH	EML	347.2 d	113
29	5	CH	EML	347.3 e	113
30	6	CH	EML	412.2 4	113
31	7	CH	EML	413.4	113
32	8	CH	EML	552.1	113
33	9	CH	EML	554.1	113
34	10	CH	EML	563.1	113
35	11	CH	EML	615.1	113
36	1	ID	EGG	322.6	
37	1	ID	ICPP	114.4	
38	2	ID	ICPP	141.1	
39	3	ID	ICPP	142.5	
40	4	ID	ICPP	325.3	
41	5	ID	ICPP	348.1	
42	6	ID	ICPP	412.4	

43	7	ID	ICPP	413.5	
44	8	ID	ICPP	461.4	
45	9	ID	ICPP	751.5	
46	1	OH	FERMCO	A 3C	113
47	2	OH	FERMCO	T3-1	113
48	3	OH	FERMCO	222.3 d	N/A
49	4	OH	FERMCO	222.3 e	113
50	5	OH	FERMCO	231.9	113
51	6	OH	FERMCO	234.5	113
52	7	OH	FERMCO	236.2	113
53	8	OH	FERMCO	325.5	113
54	9	OH	FERMCO	337	113
55	10	OH	FERMCO	337.3	113
56	11	OH	FERMCO	347.1	113
57	12	OH	FERMCO	451.5	113
58	13	OH	FERMCO	452.1	113
59	14	OH	FERMCO	452.2 c	113
60	15	OH	FERMCO	452.2 e	113
61	16	OH	FERMCO	461.5	113
62	17	OH	FERMCO	462.3	113
63	18	OH	FERMCO	552.1 a	113
64	19	OH	FERMCO	552.1 b	113
65	20	OH	FERMCO	552.1 d	113
66	21	OH	FERMCO	552.1 e	113
67	22	OH	FERMCO	552.1 f	113
68	23	OH	FERMCO	552.1 g	113
69	24	OH	FERMCO	554.1 a	113
70	25	OH	FERMCO	554.1 b	113
71	26	OH	FERMCO	554.1 c	113
72	27	OH	FERMCO	554.1 d	113
73	28	OH	FERMCO	554.1 e	113
74	29	OH	FERMCO	554.1 f	113
75	30	OH	FERMCO	554.1 g	113
76	31	OH	FERMCO	554.1 h	113
77	32	OH	FERMCO	554.1 i	113
78	33	OH	FERMCO	554.1 j	113
79	1	OH	WVDP	A 3C.5	113
80	2	OH	WVDP	121.10	113
81	3	OH	WVDP	133.1	113
82	4	OH	WVDP	222.3 e	113
83	5	OH	WVDP	231.7	113
84	6	OH	WVDP	312.2	113
85	7	OH	WVDP	321.4	113
86	8	OH	WVDP	321.8	113
87	9	OH	WVDP	322.6	113
88	10	OH	WVDP	347.1	113
89	11	OH	WVDP	413.4	113
90	12	OH	WVDP	414.11	113
91	13	OH	WVDP	452.3 a	113
92	14	OH	WVDP	551.10	113
93	15	OH	WVDP	554.3	113
94	16	OH	WVDP	651	113
95	1	OK	ETEC	113.3	
96	2	OK	ETEC	314	
97	3	OK	ETEC	322	
98	4	OK	ETEC	334	
99	5	OK	ETEC	342	

100	6	OK	ETEC	351	
101	7	OK	ETEC	352	
102	8	OK	ETEC	412.2 f	
103	9	OK	ETEC	552.1	
104	10	OK	ETEC	554.1	
105	11	OK	ETEC	721	
106	12	OK	ETEC	722	
107	13	OK	ETEC	723	
108	14	OK	ETEC	724	
109	15	OK	ETEC	725	
110	1	OK	LEHR	T 2-1	
111	2	OK	LEHR	T 2-2	
112	3	OK	LEHR	112.2	
113	4	OK	LEHR	123	
114	5	OK	LEHR	132.1	
115	6	OK	LEHR	132.3	
116	7	OK	LEHR	138.2	
117	8	OK	LEHR	157	
118	9	OK	LEHR	234.6	
119	10	OK	LEHR	321	
120	11	OK	LEHR	322.2 d	
121	12	OK	LEHR	342.1	
122	13	OK	LEHR	347.1	
123	14	OK	LEHR	351.4	
124	15	OK	LEHR	352	
125	16	OK	LEHR	411.4	
126	17	OK	LEHR	412.2 g	
127	18	OK	LEHR	414	
128	19	OK	LEHR	414.4	
129	20	OK	LEHR	414.7	
130	21	OK	LEHR	422.3	
131	22	OK	LEHR	423.3	
132	23	OK	LEHR	423.4	
133	24	OK	LEHR	521.4	
134	25	OK	LEHR	654.3	
135	26	OK	LEHR	654.4	
136	27	OK	LEHR	654.5	
137	28	OK	LEHR	713.3	
138	29	OK	LEHR	761.3	
139	1	OK	LLNL	A 3C	113
140	2	OK	LLNL	A 3C.5	113
141	3	OK	LLNL	A 3C.8	113
142	4	OK	LLNL	A 3D	113
143	5	OK	LLNL	114.4	113
144	6	OK	LLNL	115.1	113
145	7	OK	LLNL	123	113
146	8	OK	LLNL	124	113
147	9	OK	LLNL	127	113
148	10	OK	LLNL	132.4	113
149	11	OK	LLNL	133.3	113
150	12	OK	LLNL	135	113
151	13	OK	LLNL	137	113
152	14	OK	LLNL	141.2	113
153	15	OK	LLNL	212.2	113
154	16	OK	LLNL	222.3 e	113
155	17	OK	LLNL	222.3 g	113
156	18	OK	LLNL	231.10	113

157	19	OK	LLNL	231.11	113
158	20	OK	LLNL	231.2	113
159	21	OK	LLNL	231.5	113
160	22	OK	LLNL	231.7	113
161	23	OK	LLNL	231.8	113
162	24	OK	LLNL	231.9	113
163	25	OK	LLNL	233.3	113
164	26	OK	LLNL	234.5	113
165	27	OK	LLNL	234.6	113
166	28	OK	LLNL	235.2	113
167	29	OK	LLNL	236.1	113
168	30	OK	LLNL	312.3 c	113
169	31	OK	LLNL	312.6	113
170	32	OK	LLNL	313	113
171	33	OK	LLNL	313.3	113
172	34	OK	LLNL	314.1	113
173	35	OK	LLNL	315.1	113
174	36	OK	LLNL	316.5	113
175	37	OK	LLNL	321.5	113
176	38	OK	LLNL	322.2	113
177	39	OK	LLNL	322.4	113
178	40	OK	LLNL	322.6	113
179	41	OK	LLNL	322.8	113
180	42	OK	LLNL	324.2	113
181	43	OK	LLNL	324.3	113
182	44	OK	LLNL	324.5	113
183	45	OK	LLNL	325.6	113
184	46	OK	LLNL	325.7	113
185	47	OK	LLNL	325.8	113
186	48	OK	LLNL	332.2	113
187	49	OK	LLNL	334.6	113
188	50	OK	LLNL	334.8	113
189	51	OK	LLNL	334.9	113
190	52	OK	LLNL	335.4 b	113
191	53	OK	LLNL	335.4 c	113
192	54	OK	LLNL	335.5	113
193	55	OK	LLNL	338.8	113
194	56	OK	LLNL	342.3	113
195	57	OK	LLNL	342.5	113
196	58	OK	LLNL	344.3	113
197	59	OK	LLNL	346.2	113
198	60	OK	LLNL	347.2 d	113
199	61	OK	LLNL	347.3 e	113
200	62	OK	LLNL	347.4 f	113
201	63	OK	LLNL	351.1	113
202	64	OK	LLNL	351.2	113
203	65	OK	LLNL	351.3	113
204	66	OK	LLNL	352	113
205	67	OK	LLNL	361.2	113
206	68	OK	LLNL	362	113
207	69	OK	LLNL	363.4	113
208	70	OK	LLNL	364.1	113
209	71	OK	LLNL	365.5 a	113
210	72	OK	LLNL	412.4	113
211	73	OK	LLNL	413.3	113
212	74	OK	LLNL	413.4	113
213	75	OK	LLNL	414.4	113

214	76	OK	LLNL	414.5	113
215	77	OK	LLNL	414.9	113
216	78	OK	LLNL	423.3	113
217	79	OK	LLNL	423.9	113
218	80	OK	LLNL	442.1	113
219	81	OK	LLNL	442.2	113
220	82	OK	LLNL	442.5	113
221	83	OK	LLNL	442.7	113
222	84	OK	LLNL	443.5	113
223	85	OK	LLNL	461.5	113
224	86	OK	LLNL	511.10	113
225	87	OK	LLNL	514.2	113
226	88	OK	LLNL	514.3	113
227	89	OK	LLNL	522.3	113
228	90	OK	LLNL	541.3	113
229	91	OK	LLNL	541.4	113
230	92	OK	LLNL	551.5	113
231	93	OK	LLNL	552.1 b	113
232	94	OK	LLNL	552.1 d	113
233	95	OK	LLNL	552.1 e	113
234	96	OK	LLNL	552.1 f	113
235	97	OK	LLNL	552.1 g	113
236	98	OK	LLNL	554.1 c	113
237	99	OK	LLNL	554.1 d	113
238	100	OK	LLNL	554.1 e	113
239	101	OK	LLNL	554.1 f	113
240	102	OK	LLNL	554.1 g	113
241	103	OK	LLNL	554.1 h	113
242	104	OK	LLNL	555.7	113
243	105	OK	LLNL	555.8	113
244	106	OK	LLNL	555.9	113
245	107	OK	LLNL	562.4	113
246	108	OK	LLNL	562.7	113
247	109	OK	LLNL	613.1 e	113
248	110	OK	LLNL	613.3	113
249	111	OK	LLNL	613.6	113
250	112	OK	LLNL	632.3 a	113
251	113	OK	LLNL	632.3 b	113
252	114	OK	LLNL	642.4 b	113
253	115	OK	LLNL	642.4 c	113
254	116	OK	LLNL	651	113
255	117	OK	LLNL	652	113
256	118	OK	LLNL	653	113
257	119	OK	LLNL	655	113
258	120	OK	LLNL	711	113
259	121	OK	LLNL	712.1 m	113
260	122	OK	LLNL	713.1 a	113
261	123	OK	LLNL	713.1 c	113
262	124	OK	LLNL	721	113
263	125	OK	LLNL	721.3	113
264	126	OK	LLNL	722.10	113
265	127	OK	LLNL	722.9	113
266	128	OK	LLNL	742	113
267	129	OK	LLNL	751.5	113
268	1	OR	WSSRAP	334.1 b	113
269	2	OR	WSSRAP	335.1 b	113
270	3	OR	WSSRAP	335.1 c	113

271	4	OR	WSSRAP	A 3C	371.2
272	5	OR	WSSRAP	121.10	113
273	6	OR	WSSRAP	131.4	113
274	7	OR	WSSRAP	131.5	113
275	8	OR	WSSRAP	131.6	113
276	9	OR	WSSRAP	133.1	113
277	10	OR	WSSRAP	136.3	113
278	11	OR	WSSRAP	222.6	371.10
279	12	OR	WSSRAP	231.7	113
280	13	OR	WSSRAP	232.1	113
281	14	OR	WSSRAP	322.2	113
282	15	OR	WSSRAP	325.1	
283	16	OR	WSSRAP	325.2 a	371.2
284	17	OR	WSSRAP	325.3	113
285	18	OR	WSSRAP	325.5	113
286	19	OR	WSSRAP	325.7	113
287	20	OR	WSSRAP	335.3 a	371.2
288	21	OR	WSSRAP	335.4 b	113
289	22	OR	WSSRAP	335.4 c	113
290	23	OR	WSSRAP	338.2	113
291	24	OR	WSSRAP	338.3	371.2
292	25	OR	WSSRAP	338.8	113
293	26	OR	WSSRAP	342.11 c	113
294	27	OR	WSSRAP	342.3	113
295	28	OR	WSSRAP	347.2 d	113
296	29	OR	WSSRAP	413.4	113
297	30	OR	WSSRAP	414.11	113
298	31	OR	WSSRAP	414.9	371.9
299	32	OR	WSSRAP	442.5	113
300	33	OR	WSSRAP	451.7	371.2 & 371.5
301	34	OR	WSSRAP	453.1	371.3
302	35	OR	WSSRAP	461.1	371.2
303	36	OR	WSSRAP	461.2	371.2
304	37	OR	WSSRAP	511.9	113
305	38	OR	WSSRAP	514.3	113
306	39	OR	WSSRAP	543.2	113
307	40	OR	WSSRAP	552.1 f	113
308	41	OR	WSSRAP	554.1 a	113
309	42	OR	WSSRAP	554.1 b	113
310	43	OR	WSSRAP	554.1 c	113
311	44	OR	WSSRAP	554.1 g	113
312	45	OR	WSSRAP	554.3	113
313	46	OR	WSSRAP	554.4	113
314	47	OR	WSSRAP	555.3	371.3
315	48	OR	WSSRAP	612.1	113
316	49	OR	WSSRAP	613.4	113
317	50	OR	WSSRAP	633.1	371.2
318	51	OR	WSSRAP	654.3	113
319	52	OR	WSSRAP	657.4	113
320	53	OR	WSSRAP	662.1	113
321	1	SR	SRS	115	
322	2	SR	SRS	123	
323	3	SR	SRS	124	
324	4	SR	SRS	131	
325	5	SR	SRS	231	
326	6	SR	SRS	236	
327	7	SR	SRS	335	

328	8	SR	SRS	346
329	9	SR	SRS	414
330	10	SR	SRS	414
331	11	SR	SRS	553
332	12	SR	SRS	554
333	13	SR	SRS	613
334	14	SR	SRS	642
335	15	SR	SRS	751

(*) This information was available at DOE–HQ only for those Technical Equivalency Determinations with complete documentation

N/A: This TED is no longer necessary base on the February 1994 revision of the Radiological Control Manual