

**CARLSBAD FIELD OFFICE**  
**Annual Workforce Analysis and Staffing Plan Report**  
**As of December 31, 2004**

**Section One: Current Mission(s) of the Organization and Potential Changes**

1. The Carlsbad Field Office (CBFO) is responsible for the oversight of transuranic (TRU) waste operations at the Waste Isolation Pilot Plant (WIPP). The WIPP includes:
  - One operating Category 2 non-reactor nuclear facility for Contact-Handled (CH) TRU waste operations, and
  - One Category 2 non-reactor nuclear facility for Remote-Handled (RH) TRU waste scheduled to become operational in 2006
2. As clearly defined in the Land Withdrawal Act (LWA), the WIPP is a deep geologic repository for U.S. defense TRU waste. Unless the LWA is changed, there is no probable change to the WIPP mission that may significantly impact the need for technical staffing.

**Section Two: Technical Staffing**

The CBFO technical staffing charts for: (1) Safety System Oversight (SSO) Staffing Analysis, and (2) Technical Qualification Program (TQP) Staffing Analysis are attached. It should be noted that, although there are eight “vital safety systems” at the WIPP site, only one system – the Waste Hoist Brake is identified as a safety system (Safety Significant).

**Section Three: Current shortages and plans for filling them**

Currently there is no shortage in the CBFO staff to perform critical SSO and TQP functions and duties, as shown in the staffing analysis charts. There is a vacancy for an Assistant Manager for Operations that is a STSM position where a selection certificate has been issued to the selecting official. CBFO does plan to fill the vacant position of Mine Operations Advisor (a non-critical position) with an incumbent who is experienced in mine safety and mine operations.

**Section Four: Projected shortage/surplus over next 3 years**

The CBFO does not expect significant change in its technical personnel and positions. The impact of foreseeable technical staffing changes in the next few years is expected to be minimal.

**Section Five: General concerns or recommendations related to the Technical Staffing**

The recent CBFO SSO Program Implementation Assessment identified a deficiency related to Senior Technical Safety Manager (STSM) qualification and training requirements for supervisors who are responsible for SSO personnel. CBFO management is working with EM human resources staff to revise the position descriptions of these supervisory positions to include STSM requirements, as specified in DOE M 426.1-1A.

## TECHNICAL STAFFING

**Number of Hazard Category 1, 2, or 3 Nuclear Facilities:** *Two Hazard Category 2 non-reactor nuclear facilities.*

**Number of Radiological Facilities:** *None.*

**Number of High or Moderate Hazard Non-Nuclear Facilities:** *None.*

**Number of Low Hazard Non-Nuclear Facilities:** *None.*

**Number of DSAs:** *One approved DSA for CH-TRU waste operations, one draft DSA for RH-TRU waste operations (scheduled to begin in 2006).*

**Number of Safety Systems:** *One Safety Significant system (Waste Hoist Brake).*

**Number of Contractor FTEs:** *~ 650 M&O contractor FETs, ~150 national laboratory and technical support contractor FTEs.*

**Number of Federal Office FTEs:** *50 FTEs (authorized).*

### Technical Staffing Summary

TECHNICAL CAPABILITY	# NEEDED	# ON BOARD	COMMENTS
Senior Technical Safety Manager (STSM)	4	3	<i>One in qualification. One selection pending.</i>
Facility Representative (FR)	1	1	
Safety System Oversight (SSO)	5	5	
Authorization Basis (AB)	1	1	<i>Part of SSO staff (lateral assignment)</i>
Quality Assurance	4	4	
Nuclear Safety*	1	1	<i>Part of SSO staff (lateral assign.)</i>
Mechanical Engineer*	1	1	<i>Part of SSO staff (lateral assign.)</i>
Electrical Engineer*	1	1	<i>Part of SSO staff (lateral assign.)</i>
Instrumentation & Control	0	0	
Criticality Engineer	0	0	
Chemical/Process Engineer	0	0	
Fire Protection Engineer*	1	1	<i>Part of SSO staff (lateral assign.)</i>
Occupational Safety*	1	1	<i>Part of SSO staff (lateral assign.)</i>
Industrial Hygiene*	1	1	<i>Part of SSO staff (lateral assign.)</i>
Radiation Protection*	1	1	<i>Part of SSO staff (lateral assign.)</i>
Civil/Structural Engineer*	1	1	<i>Part of SSO staff (lateral assign.)</i>
Emergency Preparedness*	1	1	<i>Part of SSO staff (lateral assign.)</i>
Software Quality Assurance (SQA)*	1	1	<i>Part of QA staff</i>
Nuclear Explosives	0	0	
Technical Program Manager	0	0	
Transportation	0	0	
Environmental/Waste Manager	1	1	
Safeguards and Security*	1	1	<i>Part of SSO staff (lateral assign.)</i>
Construction Manager	0	0	
Other	0	0	

*\* Due to the simplicity of the WIPP facilities and operations, each of these positions only requires a fraction of an FTE. As of December 2004, there are 12 participants in the CBFO TQP, with 11 qualified. Should technical expertise not available on the CBFO staff be required, it will be obtained from other DOE personnel or support contractors.*



**Table 2 - Facility Hazard Ranking Factor**

a	Facility Hazard Value (from Table 1) b	Facility Size c	Material Condition d	Operations Complexity e	Programmatic Importance f	Operational Rigor g	Facility Hazard Ranking Factor h=b*c*d*e*f*g
WIPP	6	1.25	0.75	0.75	1.00	0.75	3

Table 3 - Critical TQP Staff Base Time Commitment								
Critical TQP Staff Programmatic and Collateral Activities								
	Activity	Hrs/day	Hrs/week	Hrs/month	Hrs/quarter	Hrs/year	Total Hours	FTE
Fixed-Time Technical Activities	<b>Meetings/Interface/Coordination</b>							
	Attend routine program meetings		1				52	0.025
	Attend meetings with Contractor POCs			1			12	0.006
	Meeting w/ Program/Project Staff		1				52	0.025
	Fac Rep One-on-One Interface		1				52	0.025
	<b>TQP Training/Requalification</b>							
	TQP Requalification					20	20	0.01
	TQP Training					20	20	0.01
	<b>Reporting Activities</b>							
	Logkeeping			1.5			18	0.009
	Reporting - Quarterly, Weekly, Monthly		0.2	0.5	2	12	36.4	0.018
	<b>Safety/Authorization Basis</b>							
	Review DSA Mods/JCOs					20	20	0.01
	Annual Review of USQ Determinations					20	20	0.01
	Review of Assigned Safety System USQs						0	0
	<b>Contractor Procedure/Process Changes</b>							
	Review Process/Procedure Changes			4			48	0.023
	<b>Travel Time to System/Project Location</b>						0	0
	<b>Program Assessment &amp; Improvement</b>						24	0.012
	<b>Successor Development &amp; Qualification</b>						0	0
<b>Turnover to Successor</b>						0	0	
	<b>Fixed-Time Technical Hours Subtotal</b>						374.4	0.18
Critical TQP-Specific Activities	<b>Corrective Action Program (CAP)</b>							
	Review emerging problems			2			24	0.012
	Review CAP resolutions			4			48	0.023
	Follow-up/Closure of Findings, Issues				4		16	0.008
	<b>Performance Monitoring</b>							
	Reviews of System Performance/Reliability			4			48	0.023
	Review System Health Reports/Perf Ind.			4			48	0.023
	Review TSR/LCO Performance			1			12	0.006
	Monitor Contractor Performance		1				52	0.025
	<b>Inspection/Condition Monitoring</b>							
	System Walkdowns/CAP Inspections			4			48	0.023
<b>Other (Specify)</b>						0	0	
	<b>TQP-Specific Time Subtotal</b>						296	0.142
	<b>Total BASE Technical Time</b>						670.4	0.32
Administrative Time	<b>Other Technical Assignments - Non-TQP</b>							
	Operational Readiness Reviews						0	0.00
	Special Assginments					80	80	0.04
	Collateral Assignments			8			96	0.05
	Non-TQP Assessments (e.g., ISM, etc.)				24		96	0.05
	Technical Support to Other Federal Staff			8			96	0.05
	<b>Administrative Duties &amp; Activities</b>							
	Time keeping		0.25				13	0.01
	Training Registration						0	0.00
	Travel					80	80	0.04
	Personnel Activities						0	0.00
	Medical Qualifications/Exams						0	0.00
	Document Reviews			4			48	0.02
	Mail & E-Mail Management	0.5					130	0.06
	Staff Meetings		2	2	4		144	0.07
	Annual Leave		3.5				182	0.09
	Sick Leave			4			48	0.02
	Military Leave						0	0.00
	Training, GET					4	4	0.00
	Training, Rad Worker II					4	4	0.00
	Training, Hazwoper Refresher					8	8	0.00
	Training, Facility Access					8	8	0.00
	Training, Admin (EEO, Ethics, etc.)					12	12	0.01
	Other, Specify						0	0.00
Overtime (0%)						0	0.00	
	<b>Critical TQP Staff Administrative Time</b>						1049	0.50







**Table 7 - Multiple TQP Position Assignment Factors**

TQP Position (a)	Facility or Program (b)	System or Design Feature (c)	Adjusted TQP Specific Technical Hours/Year (d)	Fixed-Time Technical Hours/Year (f)	Total TQP Technical Hours/Year (see Note 1) (g)	Total Calculated TQP Technical FTE (h)	Enter % of Calculated TQP Staff Committed to Provide (from Table 7) (i)
Mechanical	CH-TRU Ops		167	374	624	0.30	100%
	RH-TRU Ops		167				100%
Nuclear Safety		#REF!	#REF!	374	#REF!	#REF!	
	CH-TRU Ops		167				100%
	RH-TRU Ops		167				100%
QA		#REF!	#REF!	374	#REF!	#REF!	
			#REF!				
		#REF!					
	CH-TRU Ops		167				100%
	RH-TRU Ops						100%

Note 1: Total TQP Technical hours/year = Fixed Time Technical hours  
 + largest adjusted TQP Specific Technical hours \* % Committed  
 + 0.5\*(TQP Specific Technical{2} dependent hours) \* % Committed  
 + 0.5\*(TQP Specific Technical{3} dependent hours) \* % Committed  
 + . . . + 0.5\*(TQP Specific Technical{N} dependent hours) \* % Committed

**Table 8 - Critical TQP Available Time for Coverage, Assignment-Specific Method**

TQP Position	Staff Assigned	Total Available Hours	Collateral Duty Assignments	Estimated Collateral Duty Time Commitments hr/yr	Leave, Admin, Training Time hr/yr	Available Staff Time for Critical TQP Duties g=c-e-f		Needed TQP Staff (from Table 7) FTE	Is Available Critical TQP Staffing Acceptable? h ≥ i?
						hours	FTE		
a	b	c	d	e	f	g	h	i	j
Mechanical	Oliver	2080	Systems Eng.	256	702	1120	0.54		
subtotals		2080		256	702	1122	0.54	0.30	Yes
Nuclear Safety	Farrell	2080	Safety Officer	368	681	1031	0.50		
subtotals		2080		368	681	1031	0.50	#REF!	#REF!
QA	Chism	2080	QA Sepcialist	600	681	799	0.38		
subtotals		2080		600	681	799	0.38	#REF!	#REF!

The undersigned have reviewed and approved this staffing analysis.

signature on file \_\_\_\_\_  
 George Basabilvazo  
 Director, Office of Disposal

signature on file \_\_\_\_\_  
 Chuan-Fu Wu  
 Acting Deputy Manager, CBFO

signature on file \_\_\_\_\_  
 Lloyd Piper  
 Acting Manager, CBFO

\_\_\_\_\_ Date: 12/28/04

**Table 9 - Actual TQP Staff Assigned to Systems, Design Features, and Programs/Projects**

TQP Position a	Facility or Program b	System or Design Feature c	Facility Hazard Ranking Factor (from Table 2) d	Program or Project Adjustment Factor (from Table 5) e	Coverage Factor % (goes to Table 7) f	Basis for Less than 100% Assigned Coverage g
Mechanical	CH-TRU Ops			0.75	100%	
	RH-TRU Ops			0.75	100%	
Nuclear Safety						
	CH-TRU Ops			0.75	100%	
	RH-TRU Ops			0.75	100%	
	RH-TRU Ops					
QA						
	CH-TRU Ops			0.75	100%	
	RH-TRU Ops			0.75	100%	

# Carlsbad Field Office Safety System Oversight Staffing Analysis - December 2004

Table 1 - Facility Hazard Ranking Worksheet														Tank Farms Project						December 2004																	
	Radiation Exposure			Criticality			Biological			Hazardous Chemicals			Vapors			Electricity			Cryogenics			High Pressure			Hoisting & Rigging			Construction or D&D			Explosives			Fire			Facility Hazard Value
Nuclear Facility	public worker environment			public worker environment			public worker environment			public worker environment			public worker environment			public worker environment			public worker environment			public worker environment			public worker environment			public worker environment									
	WIPP	1																																6			
																																	0				
																																	0				
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																																	0				

**Table 2 - Facility Coverage Ranking Factor**

Facility or Groups of Facilities a	Facility Hazard Value (from Table 1) b	Facility Size c	Material Condition d	Operations Complexity e	Programmatic Importance f	Operational Rigor g	Facility Hazard Ranking Factor h=b*c*d*e*f*g
WIPP	6	1.25	0.75	0.75	1.00	0.75	3

Table 3 - Safety System Adjustment Factor						
Facility / Nuclear Safety Systems	System Type	System Size	System Complexity	System Condition	Contractor System Engineer Program Implementation	Safety System Adjustment Factor
a	b	c	d	e	f	$g=c*d*e*f$
WIPP						
Waste Hoist Brake	Mechanical	0.75	0.75	0.75	0.75	0.3

**Note:**  
 In accordance with the process instruction, this analysis focuses on safety systems identified in the facility authorization basis. The WIPP DSA has only one safety system, the Waste Hoist Brake (a Safety Significant system). Although there are seven other systems identified as "vital safety systems" in WIPP Procedure WP 09, *Engineering Conduct of Operations*, they are not included in this analysis.

**Table 4 - SSO Base Time Commitment**

SSO Programmatic and Collateral Activities for a Simple Safety Significant System in a low hazard facility									
	Activity	Hrs/day	Hrs/week	Hrs/month	Hrs/quarter	Hrs/year	Total Hours	FTE	
<b>Fixed-Time Technical Activities</b>	<b>Meetings/Interface/Coordination</b>								
	Attend routine program meetings		1				52	0.025	
	Attend meetings with Contractor SEs			1			12	0.006	
	Weekly Meeting w/ Fac Reps		1				52	0.025	
	Fac Rep One-on-One Interface		1				52	0.025	
	<b>SSO Training/Requalification</b>								
	SSO Requalification					20	20	0.01	
	SSO Training					20	20	0.01	
	<b>SSO Reporting Activities</b>								
	Logkeeping			2			24	0.012	
	Reporting - Quarterly, Weekly, Monthly		0.2	0.5	2	12	36.4	0.018	
	<b>Safety/Authorization Basis</b>								
	Review DSA Mods/JCOs					24	24	0.012	
	Annual Review of USQ Determinations					24	24	0.012	
	Review of Assigned Safety System USQs					10	10	0.005	
	<b>Contractor Procedure/Process Changes</b>								
	Review Process/Procedure Changes			4		6	54	0.026	
	<b>Travel Time to System Location</b>						0	0	
	<b>SSO Program Assessment &amp; Improvement</b>						36	36	0.017
	<b>Successor Development &amp; Qualification</b>						0	0	
<b>Turnover to Successor</b>						0	0		
	<b>Fixed-Time Technical Hours Subtotal</b>						416.4	0.2	
<b>System-Dependent Activities</b>	<b>Corrective Action Program (CAP)</b>								
	Review emerging system problems			2			24	0.012	
	Review CAP resolutions			4			48	0.023	
	Follow-up/Closure of SSO Findings, Issues				4		16	0.008	
	<b>Performance Monitoring</b>								
	Reviews of System Performance/Reliability			4			48	0.023	
	Review System Health Reports/Perf Ind.			4			48	0.023	
	Review TSR/LCO Performance			1			12	0.006	
	Monitor Contractor SE Program		1				52	0.025	
	<b>Inspection/Condition Monitoring</b>								
	System Walkdowns/CAP Inspections			4			48	0.023	
<b>Other (Specify)</b>						0	0		
	<b>System-Dependent Time Subtotal</b>						296	0.142	
	<b>Total BASE SSO Technical Time</b>						712.4	0.34	
<b>Administrative Time</b>	<b>Other Technical Assignments - Non-SSO</b>								
	Operational Readiness Reviews				4		16	0.01	
	Special Assginments					80	80	0.04	
	Collateral Assignments			4			48	0.02	
	Non-SSO Assessments (e.g., ISM, etc.)				16		64	0.03	
	Technical Support to Other Federal Staff			4			48	0.02	
	<b>Administrative Duties &amp; Activities</b>								
	Time keeping			1			12	0.01	
	Training Registration						0	0.00	
	Travel					80	80	0.04	
	Personnel Activities						0	0.00	
	Medical Qualifications/Exams						0	0.00	
	Document Reviews				8		32	0.02	
	Mail & E-Mail Management	0.5					130	0.06	
	Staff Meetings		2	2	4		144	0.07	
	Annual Leave		4				208	0.10	
	Sick Leave			4			48	0.02	
	Military Leave						0	0.00	
	Training, GET					4	4	0.00	
	Training, Rad Worker II					8	8	0.00	
	Training, Hazwoper Refresher					8	8	0.00	
	Training, Facility Access					16	16	0.01	
	Training, Admin (EEO, Ethics, etc.)					12	12	0.01	
	Other, Specify						0	0.00	
	Overtime (0%)						0	0.00	
	<b>SSO Administrative Time</b>						958	0.46	

**Table 5 - System-Specific Adjusted Base SSO Hours**

Facility or Groups of Facilities (a)	System Type (b)	Safety System Adjustment Factor (c)	SSO System Dependent Base Hours (d)	Adjusted System Dependent SSO Hours/Year (e)=(c)*(d)
<b>WIPP</b>				
Waste Hoist Brake	Mechanical	0.3	296	94

**Table 6 - Multiple System Assignment Factors**

System Type (a)	Facility (b)	System (c)	Adjusted System Dependent SSO Hours/Year (d)	Fixed-Time Technical Hours/Year (f)	Total SSO Technical Hours/Year (Note 1) (g)	Total SSO Technical FTE
Mechanical	WIPP	Hoist Brake	94	416	511	0.25

Note 1: Total SSO hours/year = Fixed Time Technical hours  
 + largest adjusted system dependent hours  
 + 0.5\*(System{2} dependent hours)  
 + 0.5\*(System{3} dependent hours)  
 + . . . + 0.5\*(System{N} dependent hours)

**Table 7 - SSO Available Time for Coverage, Assignment-Specific Method**

SSO	Staff Assigned	Total Available Hours	Collateral Duty Assignments	Estimated Collateral Duty Time Commitments	Leave, Admin, Training Time	Available Staff Time for SSO Coverage		Needed SSO Coverage (from Table 6)	Is Available SSO Coverage Acceptable?  h ≥ i?
				hr/yr		g=c-d-e			
a	b	c	d	e	f	hours	FTE	FTE	j
Mechanical	Oliver	2080	Non-SSO	256					
		2080		256	958	866	0.42	0.25	Yes

The undersigned have reviewed and approved this CBFO SSO staffing analysis.

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George Basabilvazo  
Director, Office of Disposal

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Chuan-Fu Wu  
Acting Deputy Manager, CBFO

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Lloyd Piper  
Acting Manager, CBFO

Date: 12/28/04