



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064**

February 5, 2002

Mr. C. L. Terry
TXU Electric
Senior Vice President & Principal Nuclear Officer
ATTN: Regulatory Affairs Department
P.O. Box 1002
Glen Rose, Texas 76043

**SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION, UNITS 1 AND 2 -
REGULATORY CONFERENCE - JANUARY 23, 2002**

Dear Mr. Terry

This refers to the meeting conducted in the Region IV Office, Arlington, Texas, on January 23, 2002. As you are aware, the purpose of this meeting was for you to provide information that would assist in our assessment of your ability to prevent the release of licensed radioactive material to an unrestricted area that could cause a radiation dose to members of the public. The attendance list and the licensee's presentation are enclosed (Enclosures 1 and 2). Additionally, during this meeting, you provided us one additional corrective action document (SMF-2001-002621), which we had not previously reviewed.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Anthony T. Gody, Chief
Operations Branch
Division of Reactor Safety

Dockets: 50-445; 50-446
Licenses: NPF-87; NPF-89

Enclosures:

1. Attendance List
2. Licensee Presentation

TXU Electric

-2-

cc w/o enclosures:

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SHP:PSB	C:OB			
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/RA/	/RA/			
01/24/02	2/05/02			

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ENCLOSURE 1

MEETING: TXU / COMANCHE PEAK STATION

SUBJECT: Control of Radioactive Material Identified in NRC Inspection 2001-07

DATE: January 23, 2002

ATTENDANCE LIST (Please Print Clearly)		
NAME	ORGANIZATION	POSITION/TITLE
Lance Terry	TXU Energy	Sr. V.P. & Principal Nuc. Off.
Daniel Wilder	TXU CPSES	Rad & Ind Safety Mgr
John R. Curtis	TXU CPSES	RPM
Roger D. Walker	TXU CPSES	Regulatory Affairs Manager
Scott E. Bradley	TXU CPSES	Health Physics Supervisor
Michael P. Shannon	NRC	Senior Health Physicist
Ellis Merschoff	NRC	Regional Administrator
Arthur T. Howell	NRC	Director, Division of Reactor Safety
Gail M. Good	NRC	Chief, Plant Support Branch
Anthony T. Gody	NRC	Chief, Operations Branch
David Graves	NRC	Chief, Project Branch A
Gary Sanborn	NRC	Director, ACES
Chris Nolan	NRC	Enforcement Specialist
Scott Schwind	NRC	Resident Inspector - CPSES
Don Allen	NRC	Senior Resident Inspector - CPSES
Karla Smith	NRC	Regional Counsel
Larry Ricketson	NRC	Senior Health Physicist
Thomas Klug	NRC	Physical Security Inspector
Bernadette Baca	NRC	Health Physicist
Joseph L. Taylor	NRC	DRS Reactor Inspector
Eddy L. Crowe	NRC	

John M. Mateychick	NRC	Reactor Inspector
Daniel R. Carter	NRC	Health Physicist
R. La Vonn	TXU	Media
Jerry Lee	TXU	Community Relations
Mitch Lucas	TXU	Nuclear Overview Manager
Bob Kidwell	TXU	Reg. Affairs
Douglas W. Snow	TXU	Reg. Affairs
Alan Hall	TXU	Nuclear Overview
Don Woodlan	TXU	Reg. Affairs
Ralph Andersen	NEI	Health Physicist
Shari Mosty	TXU	RP Technician
Tim Woods	TXU	RP Technician
Joe Rincon	TXU	RP Technician
Karl Warkentin		Retired
Rana McGaughy	TXU	Nuclear Overview

ENCLOSURE 2

TXU PRESENTATION



TXU Energy

Comanche Peak Steam Electric Station

Public Radiation Safety

Regulatory Conference

January 23, 2002

Introduction

Lance Terry

Senior Vice President and Principal Nuclear Officer

Radiation Protection Program

Detailed and Conservative Procedures

- ***Used cotton glove liners are not allowed outside the RCA***

Aggressive System Health Program

- ***RadWorker practices self-identified in 1999 as not meeting expectations***

CPSES Radioactive Material Control Program

Most of these examples were of such low-level activity that these items could have been surveyed and released from the RCA using the instruments normally used for RCA egress.

CPSES Radioactive Material Control Program

These items were self-identified and entered into our Corrective Action Program to preclude more significant events.

Many of these items were found by processes put in place in response to prior events.

Previous corrective actions are producing positive results.

Licensee Position

*All of the examples should screen out as
“MINOR ISSUES” using the Group 1
questions of IMC-0610**

Licensee Position

*Even if all the examples are considered
“GREATER THAN MINOR”, the final
risk significance should be determined
to be GREEN per IMC-0609, App. D*

Concerns

- ***No credit given for the Defense-In-Depth built into our program***
- ***Survey standards based on a site's capabilities***
- ***Possible negative incentive to document issues at a low threshold***

Agenda

- ***Timeline*** ***D. Wilder***
- ***CPSES Radioactive Material Control Program*** ***D. Wilder***
- ***Discussion of Individual Events*** ***D. Wilder***
- ***Event Risk(s) in Perspective*** ***D. Wilder***
- ***CPSES Position on Issue Significance*** ***R. Walker***
- ***Summary and Closing*** ***L. Terry***

Timeline

Danny Wilder

Radiation and Industrial Safety Manager

CY 1999

17 SMFs related to radworker practices in first 6 months provided indications of an adverse trend. The following corrective actions were taken in response:

- **RP Department met with contractor personnel to emphasize proper radworker practices.**
- **RP Department instituted searches of modesty clothing prior to laundry**

RP and Nuclear Overview (NOD) Departments performed a combined assessment of radworker practices during the FALL refueling outage (1RF07). (NOD Eval #1999-043)

- **Several specific areas (training, equipment, awareness, etc) were identified for further evaluation to address adverse trend**
- **Negative observations were not limited to any one group of workers**
- **Initiated SMF #1999-3100 to document the combined program assessment and capture corrective actions**

RP Program Health report for 4th Qtr 1999 was rated “UNACCEPTABLE” due to trend

SMF 1999-3100

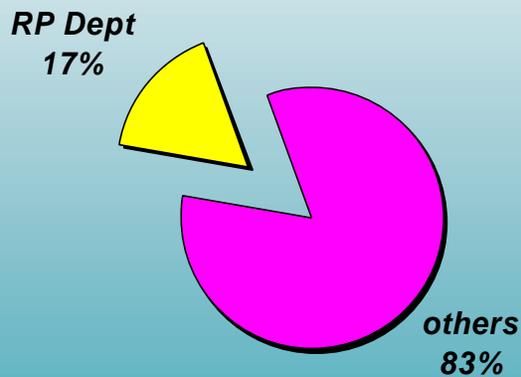
Corrective Actions

- *Human Performance Day materials developed to specifically address radiation worker practices*
- *Initiated revision of Radiation Worker Training (RWT) materials to include current radiation worker issues*
- *Reinstated the RWT dressout practical demonstrations*
- *Specific training for RP Techs on radiation worker issues, management expectations for SmartForm generation, and radiation worker coaching techniques*

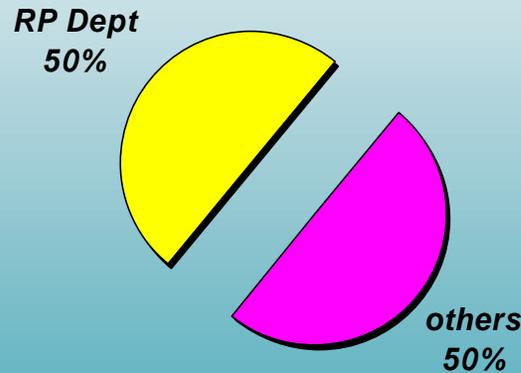
RADIOLOGICAL PRACTICES

Error Reporting by Organization

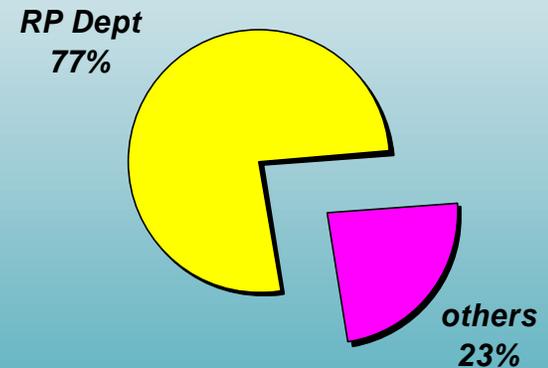
End of 1999



End of 2000



End of 2001



CY 2000

2 SMFs in first 9 months (no refueling outage) concerning low-level radioactive materials outside the RCA.

In June, INPO performed a scheduled E&A visit. Prior to this visit, TXU self-identified “Radworker Practices” as a potential area for improvement. INPO concurred with both the characterization and our plan of action at the end of their E&A visit.

RP and NOD performed a combined reassessment of RadWorker practices during the FALL refueling outage (2RF05). (NOD Eval #2000-043)

- **Improvements noted in some areas of radiation worker performance**
- **Continued challenges with control of low-level radioactive materials**
- **Initiated SMF #2000-3185 to document the combined program assessment and capture corrective actions**

SMF 2000-3185

Corrective Actions

Total of 10 recommendations for improvement in radiation worker performance and contamination controls.

2 of these recommendations were related to the problems with inadvertent releases of low-level radioactive materials and were addressed by:

- ***Modesties without pockets were acquired and implemented***
- ***Disposable glove liners were acquired and implemented***

CY 2001

NOD performed a followup assessment of RadWorker practices during the Spring refueling outage (1RF08). (NOD Eval #2001-013)

- ***Noted improvement in radiation worker practices and release of material, but problems have not been completely solved.***
- ***Pocket-less modesties and disposable gloves a success***
- ***RP needs to move beyond these barrier-type improvements and address underlying worker behavior issues to keep getting better***

During the FALL 2001 NOD Annual RP program evaluation, several aspects of RP's corrective action program were identified for improvement. (NOD Eval #2001-039)

- ***Corrective actions were being taken in response to SMF issues, but these actions were not always addressing the human performance aspects.***
- ***RP needs to work on addressing generic impacts and performance by groups outside the RP Department.***
- ***Initiated SMF #2001-2186 to document the program evaluation and capture corrective actions***

SMF 2001-2186

Corrective Actions

- *Performed a self-assessment of human performance within the RP Dept.*
- *Published human performance expectations to RP Dept.*
- *Initiated tracking of any negative trends, noted during monthly trend analysis, by entry into the SMF database*
- *Consolidated RP corrective action documentation under the Health Physics Supervisor for consistency*
- *Reformed the RP Program Health (Station) Team with members from departments outside RP.*

NRC Inspection Reports

50-445;446/01-04:

- ***2 licensee-identified violations related to the improper release of radioactive materials from the RCA***

50-445;446/01-07:

- ***verbal exit cited 3 additional licensee-identified events with a potential for public exposure***
- ***initially characterized as **GREEN** finding***
- ***CPSES initiated SMF #2001-2621 to document preliminary findings, evaluate causes, and capture corrective actions***
 - ***Scope includes all events***
 - ***Formed inter-disciplinary task team to perform a complete programmatic evaluation; including root cause analysis***
 - ***Action plan still being formulated***

Corrective Actions

The 3 programmatic SmartForms (1999-3100 / 2000-3185 / 2001-2186) although not tied to any individual event, were opened to address the global issues concerning not only radioactive material controls, but also the larger issue of RadWorker practices.

The 11 individual event SmartForms documented in IR 01-07 were trended to these 3 programmatic SmartForms to determine the effectiveness of past corrective actions.



QUESTIONS?

CPSES Radioactive Material Control Program

The guidance of NRC IE Circular 81-07 has been used extensively as a basis for our radioactive material control program.

This document provides guidance for operational detection levels “which will provide reasonable assurance that contaminated materials are properly controlled and disposed of while at the same time providing a practical method for the uncontrolled release of materials from the restricted area.”

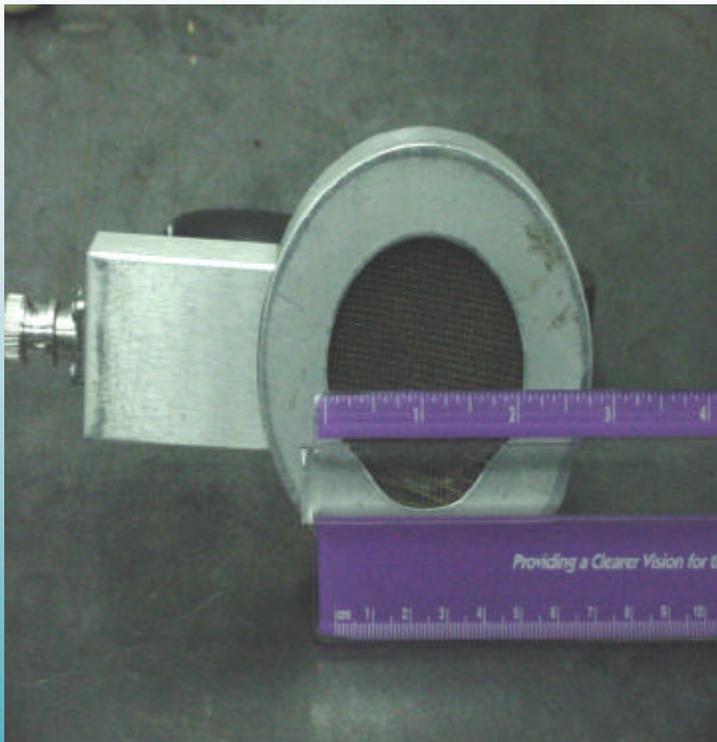
Based on providing adequate survey techniques and equipment (friskers) to be able to detect:

- *5000 dpm/100 cm² total and*
- *1000 dpm/100 cm² removable beta/gamma contamination*

CPSES Radioactive Material Control Program

We believe that 8 of the 11 examples from IR 50-446;446/01-07 were of such low-level activity, or the activity was so situated, that these items could realistically have been surveyed and released from the RCA.

CPSES Monitoring Equipment



- ***Frisker (and GM-type probes)***
- ***Primary Survey Instrument***
 - ***Used for surface contamination and smear counting Beta-Gamma radiation***
 - ***Lower Limit of Detection is 100 counts above background, approximately 5000 DPM / 100 cm²***
 - ***Accuracy dependant on rate at which probe is moved, distance to the object, and background***
 - ***Most widely-used instrument and the accepted standard in the industry for survey and release of materials***
 - ***Only instrument which NRC has provided guidance (IE 81-07).***

CPSES Monitoring Equipment



- ***Personnel Contamination Monitor (PCM2)***
- ***Primary personnel contamination detection device***
 - ***Gas-flow proportional detectors (34 total)***
 - ***Detects both point and distributed Alpha-Beta***
 - ***Alarms at 5000 DPM per zone or 30,000 DPM summation (Beta)***
 - ***Insensitive to Gamma***
 - ***Alpha-Beta sources may be shielded by clothing***
 - ***Accurate only for Alpha-Beta surface contamination***
 - ***More dependable and consistent than frisking for distributed contamination***

CPSES Monitoring Equipment



- *Portal Monitor (PM-7)*
- *Final check of personnel & hand carried items*
 - *Plastic scintillation detectors*
 - *Gamma sensitive*
 - *Detects approximately 100 nCi total activity*
 - *Accuracy and dependability limited by geometry*
 - *Final check for gross contamination & internal contamination*
 - *Demonstrated to detect less than 1% of Annual Limit of Intake (ALI)*

CPSES Monitoring Equipment



- ***Small Articles Monitor (SAM-9)***
- ***Qualitative check of hand carried items***
 - ***Gamma-sensitive plastic scintillation detectors***
 - ***Detectors are summed for an effective alarm value of 3820 DPM***
 - ***Monitors the entire article, not just the surface, for a VOLUME activity.***
 - ***Insensitive to Alpha-Beta radiation***
 - ***Limited use to small items***
 - ***SAM set up for maximum sensitivity (a qualitative go/no-go) vs. quantitative accuracy***



CPSES Monitoring Equipment

Detection Capability Comparison

	Frisker	SAM-9
Hood	100 ncpm 1,000 dpm	Alarm 18,300 dpm
Hood	90 ncpm 900 dpm	Alarm 14,400 dpm
Hood	40 ncpm 400 dpm	Alarm 11,100 dpm
Velcro Strap	110 ncpm 1,100 dpm	Alarm 12,050 dpm
Velcro Strap	80 ncpm 800 dpm	Alarm 6770 dpm

NOTE: None of these articles were above the alarm setpoints of the PCM-2 or the PM-7.

Defense In Depth Measures

All hand-carried items (with certain specific exceptions) are surveyed by a SAM-9 prior to release from the RCA

Survey of all trash dumpsters, daily during outage and prior to disposal during non-outage periods

Searches of all modesty clothing prior to laundry

Survey of areas outside the RCA, schedule varies with plant conditions



QUESTIONS?

Discussion of Events

Date	Corrective Action SMF #	Description	Discovered by 1 - PM-7 2 - Modesty search 3 - Awareness 4 - Routine survey 5 - SAM-9	Followup Frisker Survey? Yes / No If Yes, then give net cpm	Activity Determined by: 1 - frisker 2 - SAM-9 3 - MCA	Hypothetical Dose (mRem)
01/24/00	SMF 2000-0187	Reusable cotton PC glove liner	2	Y - <100	2.09E-09 Ci ²	4.00e-05
04/11/00	SMF 2000-1080	Safety harness, Warehouse C	1	Y - 1000	4.50E-09 Ci ¹	4.30e-05
09/25/00	SMF 2000-2380	Extension cord, cold tool room	3	Y - <100	1.30E-09 Ci ²	9.60e-06
09/30/00	SMF 2000-2445	Reusable cotton PC glove liner	2	N	7.30E-09 Ci ²	4.20e-05
10/01/00	SMF 2000-2458	Temporary power pack	3	Y - 100	4.50E-09 Ci ¹	2.60e-05
10/12/00	SMF 2000-2740	Oily rags found in dumpster	4	N	1.00E-06 Ci ³	3.40e-03
11/03/00	SMF 2000-3122	Reusable cotton PC glove liner	3	Y - <100	1.30E-09 Ci ²	2.20e-05
03/27/01	SMF 2001-0630*	Air fitting in tool bag	5	Y - 2000	9.00E-09 Ci ¹	3.80e-05
04/06/01	SMF 2001-0850	Velcro straps & yellow masslin	2	Y - <100	4.90E-09 Ci ²	2.80e-05
04/11/01	SMF 2001-0968	Individual wearing velcro straps	3	Y - 160	7.30E-10 Ci ¹	4.20e-06
05/24/01	SMF 2001-1352*	Tool alarmed PM-7 monitor at AAP	1	Y - 7000	3.15E-08 Ci ¹	5.90e-04

* Indicates item captured as a NCV in prior NRC Inspection Report (50-445/01-04; 50-446/01-04)

- ***SMF 2000-0187***



- ***Cotton Glove Liner***

- ***Found in bag of dirty modesties being searched prior to laundering***
- ***Item did not leave the Protected Area***
- ***Less Than 100 net counts per minute with frisker***
- ***Hypothetical Dose - 4 E-5 mrem***
- ***Assumed it left RCA in modesty pocket***
- ***Based on testing, item would NOT have alarmed PCM-2 or PM-7***

- **SMF 2000-1080**



- **Safety Harness**

- **Found at Alternate Access Point (AAP) PM-7**
- **Item had been outside Protected Area**
- **1000 net counts per minute with frisker**
- **Hypothetical Dose - 4.3 E-5 mrem**
- **The harness was obtained at Warehouse C (RAM storage area) and stored on the motorized personnel lift**
- **Inadequate survey of items on the motorized personnel lift**



- **SMF 2000-2380**
- **Extension Cord labeled Radioactive**
 - **Found on MSC Cold Tool Room Counter**
 - **Item did not leave the Protected Area**
 - **< 100 net counts per minute with frisker**
 - **1.3 E-03 mCi (estimated from SAM alarm)**
 - **Hypothetical Dose - 9 E-6 mrem**
 - **Unknown how cord left the RCA**

- ***SMF 2000-2445***

- ***Cotton Glove Liner***



- ***Found in bag of dirty modesties being searched prior to laundering***
- ***Item did not leave the Protected Area***
- ***No frisker survey***
- ***Hypothetical Dose - 4.2 E-5 mrem***
- ***Assumed it left RCA in modesty pocket***
- ***Based on testing, item would NOT have alarmed PCM-2 or PM-7***



- ***SMF 2000-2458***
- ***Temporary Power Pack***
 - ***Discovered adjacent to the MSC***
 - ***Item did not leave the Protected Area***
 - ***100 net counts per minute on a large area smear counted with frisker***
 - ***Hypothetical Dose - 2.6 E-5 mrem***
 - ***Was incorrectly surveyed for release from the RCA Yard***



- **SMF 2000-2740**

- **Oily Rags**



- **Found using MicroR meter in trash dumpster during routine survey**
 - **Item did not leave the Protected Area**
 - **Hypothetical Dose - 3.4 E-3 mrem**
 - **The origin of the rags could not be determined**
- **Actions Taken:**
 - **Dumpster tagged and taken into the RCA**
 - **Followup survey of all dumpsters and temp trailers**
 - **Frequency of dumpster surveys increased to daily during outages**

- **SMF 2000-3122**

- **Cotton Glove Liner**

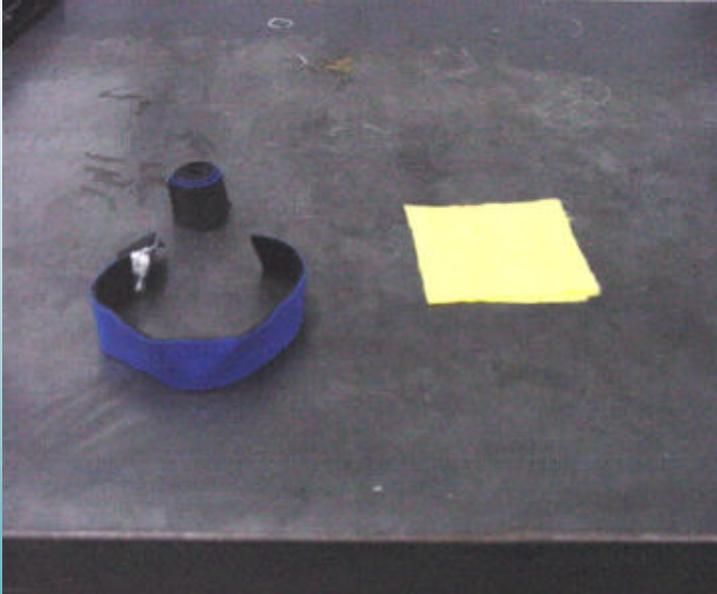


- **Discovered on a gas bottle rack outside the RCA**
- **Item did not leave the Protected Area**
- **Less Than 100 net counts per minute with frisker**
- **Hypothetical Dose - 2.16 E-5 mrem**
- **Assumed it left RCA in modesty pocket**
- **Based on testing, item would NOT have alarmed PCM-2 or PM-7**



- **SMF 2001-0630**
- **Chicago fitting**
 - **Alarmed the SAM-9 at RCA Yard Exit**
 - **Item had been outside Protected Area**
 - **2000 net counts per minute with frisker**
 - **Hypothetical Dose - 3.8 E-5 mrem**
 - **The fitting had been previously located at Warehouse C**
 - **Single spot of fixed contamination located inside the fitting**
 - **SAM-9 monitor installed for use in Whse C**

- **SMF 2001-850**
- **Velcro Straps & Masslin**



- **Found in bag of dirty modesties being searched prior to laundering**
- **Items did not leave the Protected Area**
- **<100 net counts per minute with frisker**
- **Hypothetical Dose - 2.8 E-5 mrem**
- **Assume individual wore the straps and masslin was in modesty pockets**
- **Based on testing, items would NOT have alarmed PCM-2 or PM-7**

- **SMF 2001-968**
- **Velcro Straps**



- **RP Technician noticed individual wearing straps outside the RCA**
- **Items came from outside the Protected Area**
- **160 net counts per minute with frisker**
- **Hypothetical Dose - 4.2 E-6 mrem**
- **Individual stated he had the straps from another plant and been through the portals**
- **Based on testing, items would NOT have alarmed PCM-2 or PM-7**

- ***SMF 2001-1352***

- ***Channel Lock Pliers***



- ***Alarmed the PM-7 at the Alternate Access Point (AAP)***
- ***Items did not leave the Protected Area***
- ***Checked out of the Cold Tool Room***
- ***7000 net counts per minute with frisker***
- ***Hypothetical Dose - 5.9 E-4 mrem***
- ***Suspect the tool came from the RCA Yard***

HYPOTHETICAL RISK

associated with this material

Total hypothetical dose from all 11 items

= **0.0043 mrem** (4.3E-6 Rem)

The risk associated with this level of dose is not significant.

< 0.1% of the SDP individual event decision block

< 0.005% of the public dose limit of 10CFR20.1301

< 0.02% of the operational dose standards of 40CFR190.10

< 1% of the Negligible Individual Dose of NCRP-116.

Perspective on Hypothetical Risk Significance

- ***Assuming it was all Co-60 : The ALI for Co-60 is 30 mCi***
- ***Total activity of all items is conservatively estimated to be : 1 mCi***
- ***An uptake of this amount of activity would not require individual monitoring***
- ***Assuming the CPSES DAW Nuclide mix, the uptake would be less than 1% of an ALI***



QUESTIONS?

Issue Significance Determination

Roger Walker

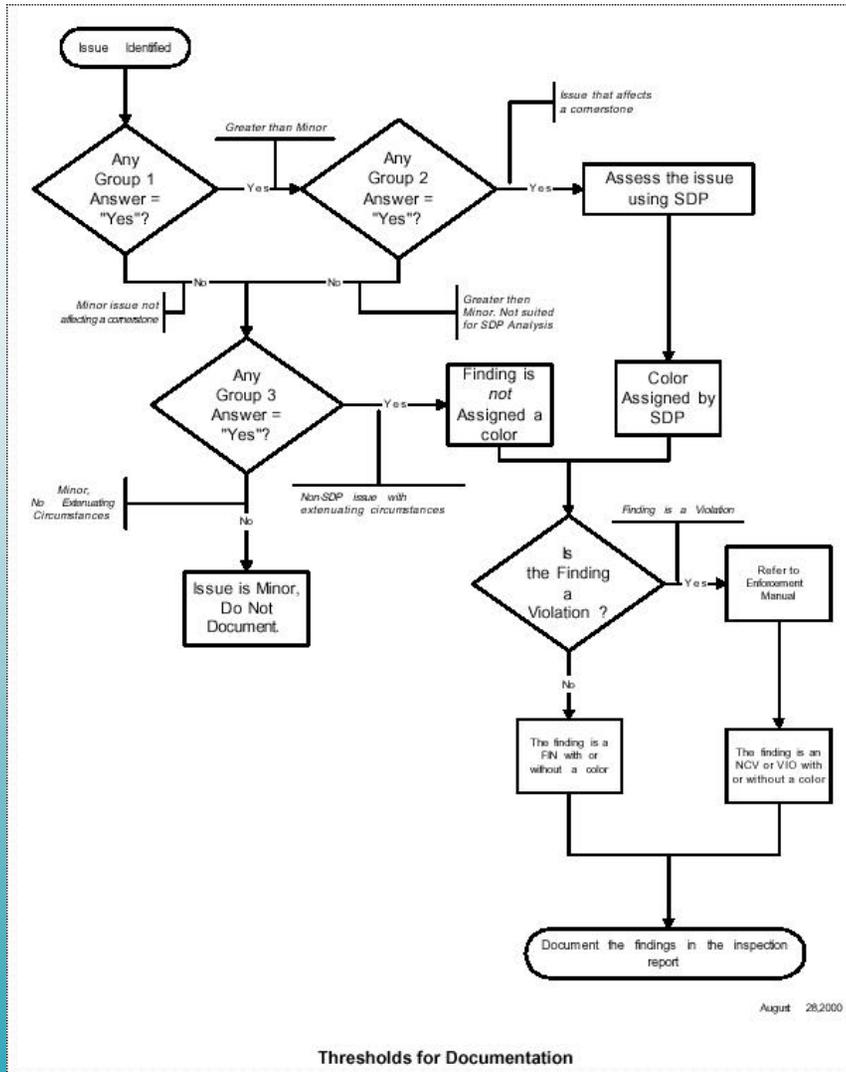
Regulatory Affairs Manager

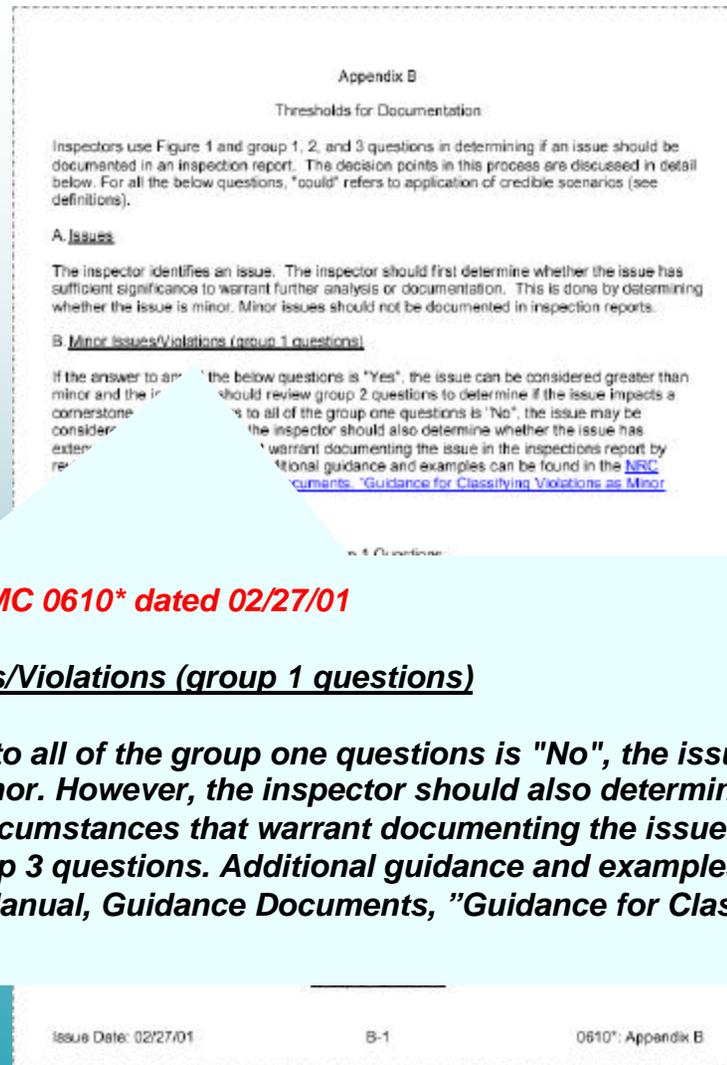
Issue Significance

All potential findings must be screened first using the NRC's Inspection Manual Chapter 0610*, "Reactor Inspection Reports" Appendix B "Thresholds for Documentation" prior to being evaluated by the actual Significance Determination Process (SDP) of IM 0609.

NRC Inspection Manual Chapter 0609, "Significance Determination Process" (SDP) Appendix D, "Public Radiation Safety" addresses Radioactive Material Control related issues.

Issue Significance Process Flow Path





Excerpt from IMC 0610* dated 02/27/01

B. Minor Issues/Violations (group 1 questions)

If the answers to all of the group one questions is "No", the issue may be considered minor. However, the inspector should also determine whether the issue has extenuating circumstances that warrant documenting the issue in the inspections report by reviewing group 3 questions. Additional guidance and examples can be found in the NRC Enforcement Manual, Guidance Documents, "Guidance for Classifying Violations as Minor Violations."

Public Radiation Safety - Regulatory Conference



Appendix B

Excerpt from IMC 0610* dated 02/27/01

- (1) **Does the issue have an actual or credible impact on safety?**
- (2) **Could the issue be reasonably viewed as a precursor to a significant event?**
- (3) **If left uncorrected, would the same issue under the same conditions become a more significant safety concern?**
- (4) **Does the issue relate to collecting or reporting performance indicators that would have caused a PI to exceed a threshold?**

... that warrant documenting the issue in the inspection report by ...
s. Additional guidance and examples can be found in the [NSIC](#)
... Documents: "Guidance for Classifying Violations as Minor

Group 1 Questions

Group 1 questions are intended to parallel the Enforcement Manual's guidance on what constitutes a minor violation. Numerous examples are provided in this guidance for a variety of issues and provide clarity regarding complex issues such as those associated with Maintenance Rule findings. Inspectors should consult this guidance after reviewing group 1 questions if there is any question whether an issue should be considered minor.

- (1) Does the issue have an actual or credible impact on safety?
- (2) Could the issue be reasonably viewed as a precursor to a significant event?
- (3) If left uncorrected, would the same issue under the same conditions become a more significant safety concern?
- (4) Does the issue relate to collecting or reporting performance indicators that would have caused a PI to exceed a threshold?

C. Issues Affecting Cornerstones (Group 2 Questions)

If the answer to any group 2 question is "Yes", the issue should be analyzed by the SDP process, assigned a color, and documented in the inspection report. If the answers to all group 2 questions are "No", then the inspector should determine whether there are extenuating circumstances by reviewing the group 3 questions.

(Note: Group 2 questions are intended to determine if the identified issues which impact a cornerstone. "No" only means that the issue is not suitable for SDP evaluation).

Group 2 Questions

Issue Date: 02/27/01

B-1

0610*: Appendix B

NRC Inspection Report

From NRC IR 50-445/01-07; 50-446/01-07 section 40a2c(2):

The events were more than minor because the failure to properly survey radioactive material has a credible impact on safety, in that, an inadvertent release of radioactive material and an unplanned exposure could occur to occupational workers and members of the public. (Emphasis added)

CPSES Position

IMC 0610* defines CREDIBLE as: “A scenario offering reasonable grounds for being realistic (given a set of existing conditions postulating a scenario with no more than one “if”). (emphasis added)

Since the potential impact on safety (significance) of these items is inadvertent dose to the public, the only applicable variables are:

- *Time of exposure;*
- *Or*
- *Activity (dose rate)*

CPSES Position

Varying time of exposure

If all items were assumed to aggregate together and expose an individual 24 hr/day for 365 days, the maximum calculated exposure would still be < 0.005 Rem.

A more realistic, but still conservative calculation of the collective exposure would be about three orders of magnitude less.

0.0043 mRem

(4.3E-6 Rem)

CPSES Position

Varying activity of items released

We believe 9 of the 11 examples from IR 50-446;446/01-07 were surveyed and could have been no more than 10X their actual activity without detection by either a PCM or PM7 monitor.

This would change the dose estimate from these materials to only 4.3E-5 Rem. Still a very small fraction of the public dose limits.

NRC IM Chapter 0610*

Do the issues have an actual or credible impact on safety?

Actual impact on safety?

NO

Credible impact on safety?

NO

CPSES Position

When the issue is assessed via SDP,

- ***this issue should screen out as a “minor” issue using the Group 1 questions of IMC-0610****

NRC IM Chapter 0610*

Group 2 Questions Radiation Safety—Public

- (1) *Does the issue involve an occurrence in the licensee's radiological effluent monitoring program that is contrary to NRC regulations or the licensee's TS, Offsite Dose Calculation Manual (ODCM), or procedures?*
- (2) *Does the issue involve an occurrence in the licensee's radiological environmental monitoring program that is contrary to NRC regulations or the licensee's TS, ODCM, or procedures?*
- (3) Does the issue involve an occurrence in the licensee's radioactive material control program that is contrary to NRC regulations or the licensee's procedures?**
- (4) *Does the issue involve an occurrence in the licensee's radioactive material transportation program that is contrary to NRC or Department of Transportation (DOT) regulations or licensee procedures?*

CPSES agrees that the answer would be “yes” to question #3 for any of the examples noted in the inspection report, because they each relate to conditions contrary to our procedures. As such, any example that is determined to be more than minor would be reviewed under the 0609 SDP.

Public Radiation Safety SDP

From IMC 0609, Appendix D:

Radioactive Material Control Program

Objective

This branch of the logic diagram focuses on the licensee's radioactive material control program. It assesses the licensee's ability to prevent the inadvertent release of licensed radioactive material **to an unrestricted area** that can cause a radiation dose to **members of the public.** *(emphasis added)*

Public Radiation Safety SDP

From IMC 0609, Appendix D:

Radioactive Material Control Program

Basis

10 CFR Part 20 contains the requirements for the control and disposal of licensed radioactive material. At a licensee's facility, any equipment or material that came into contact with licensed radioactive material or that had the potential to be contaminated with radioactive material of plant origin **and are to be removed from the facility** must be surveyed for the presence of licensed radioactive material. This is because NRC regulations, with one exception in 10 CFR 20.2005, provide no minimum level of licensed radioactive material that can be disposed of in a manner other than as radioactive waste or transferred to a licensed recipient.

(emphasis added)

Public Radiation Safety SDP

“SDP determination process

Is there a finding in the licensee’s radiological material control program that is contrary to NRC regulations? If yes, the question is what is the dose impact (as calculated by the licensee) of the event? If the dose impact was **not more than 0.005 rem total effective dose equivalent (TEDE) and there were not more than 5 of these events in the inspection period**, then the SDP classification is GREEN.”

“If the dose impact was greater than 0.005 rem TEDE or there **were more than 5 occurrences that were not above 0.005 rem TEDE** in the inspection period (two years), then the SDP classification is **WHITE**. If the dose impact is greater than 0.1 rem TEDE (exceeds 10 CFR Part 20 public dose limit), the SDP classification is **YELLOW**. If the dose impact was greater than 0.5 rem TEDE, the SDP classification is **RED**.”



Definitions

From 10 CFR 20.1003

RESTRICTED AREA - *an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials.*

CONTROLLED AREA - *An area, outside of a restricted area but inside the site boundary, access to which can be limited by the licensee for any reason.*

UNRESTRICTED AREA - *Unrestricted area means an area, access to which is neither limited nor controlled by the licensee.*

From CPSES ODCM

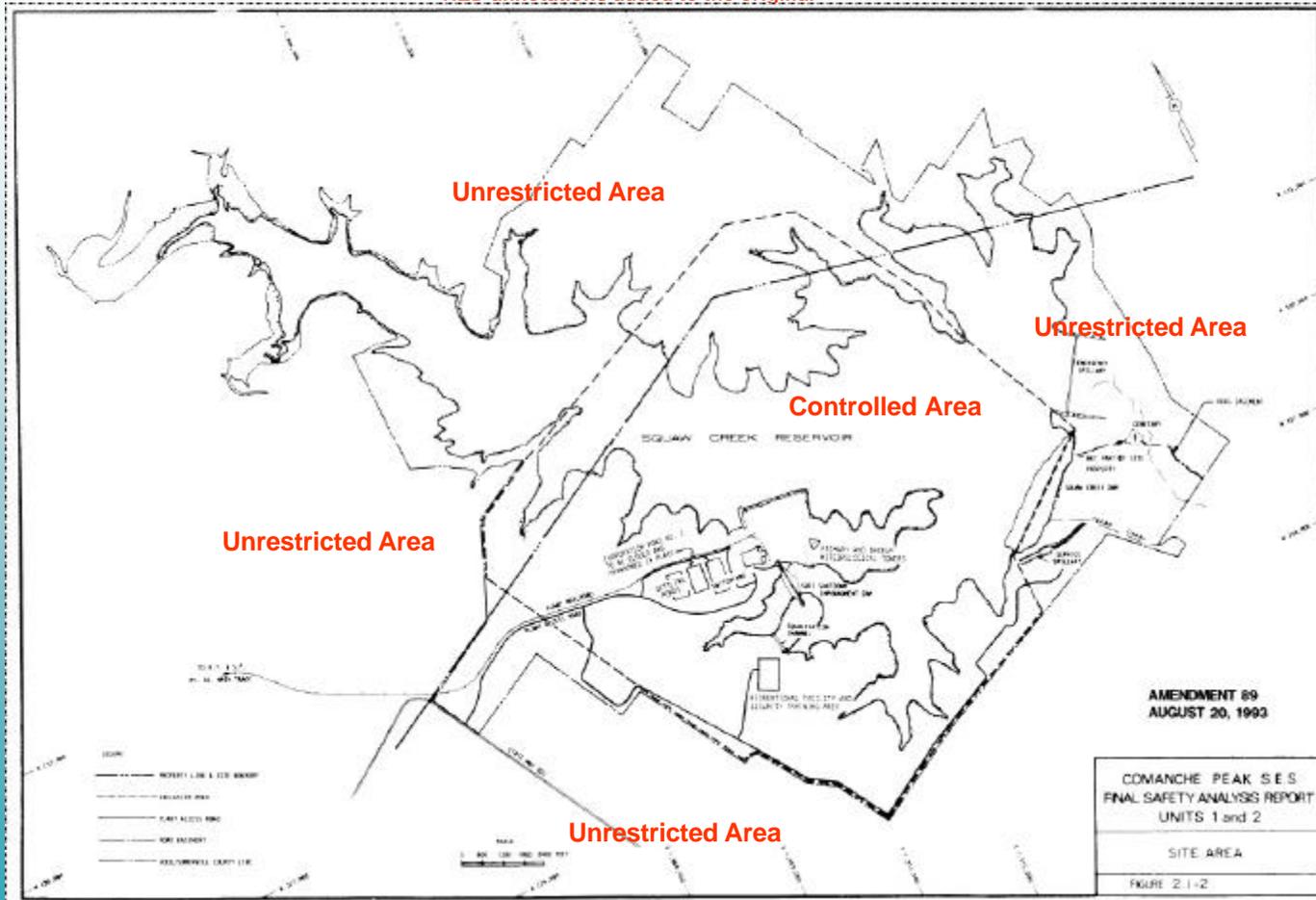
CONTROLLED AREA - *A CONTROLLED AREA means an area outside of a restricted area, as defined in 10 CFR20.1003, but inside the SITE BOUNDARY, access to which can be limited by the licensee for any reason.*

UNRESTRICTED AREA - *An UNRESTRICTED AREA means any area beyond the SITE BOUNDARY.*

CPSES Radioactive Material Control Program

CPSES area boundaries taken from CPSES FSAR, Figure 2.1-2

RED annotations added to the original



NRC Inspection Report

From NRC IR 50-445/01-07; 50-446/01-07

“We note that none of the material was released from the owner-controlled property and that the potential public exposure associated with these items was less than 5 millirem, a small fraction of NRC limits.” *(emphasis added)*

Public Radiation Safety SDP

What should be counted as an event / occurrence?

One interpretation could be that any violation of your Rad Material Control Program counts an event.

However, CPSES believes that to count as event / occurrence, and be consistent with the objective and basis of the SDP, that there must be an occurrence of an “inadvertent release of licensed radioactive material to an unrestricted area that can cause a radiation dose to members of the public.”

If the material has not been released to an “unrestricted area” it should not count as an event.

CPSES Position on SDP Significance

Since none of these events involve a release of radioactive materials to an unrestricted area (as defined by CPSES ODCM), this issue should be considered to have zero examples that fall within the scope of IM 0609 App D as an “event” / “occurrence”, and the significance would be Green

Even if the Protected Area boundary, because of the portal monitors, is conservatively used as defining the “Unrestricted Area” for SDP purposes, then only 3 of the events should be counted.

- *SMF 2000-1080; Safety Harness from WHSE C*
- *SMF 2001-0630; Chicago air fitting from WHSE C*
- *SMF 2001-0968; Velcro Straps*

In either case, the number is still less than 5 and therefore Green

Significance Conclusion

CPSES believes that even if the examples are considered “greater than minor”, the finding should be characterized as **GREEN** per IMC-0609, App. D

This is because:

- ***no event had a dose impact > 5.0 mrem***
- ***there are < 5 events that could have exposed members of the public in an unrestricted area***



QUESTIONS?

Summary

Lance Terry

Senior Vice President and Principal Nuclear Officer

SUMMARY

RP Management at Comanche Peak:

- *self-identified the concerns with the program*
- *took conservative actions to ensure no loss of control of radioactive materials*
- *documents issues at a low threshold*
- *is still aggressively working to eliminate these low-level items*

SUMMARY

Additionally;

- *Each of these items should screen out as “minor issues”*
- *Public Radiation Safety SDP tool is not risk-based*
- *These items clearly do not represent a “low to moderate risk”*
 - *No threat to the public*
 - *None of the items left the Owner-Controlled Area at CPSES*
 - *Only 3 items left the Protected Area*
 - *Total hypothetical dose significantly less than 0.005 REM*