



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
612 EAST LAMAR BLVD, SUITE 400  
ARLINGTON, TEXAS 76011-4125

December 1, 2008

EA-08-261

Schlumberger Technology Corporation  
Attn: Raymond N. Dickes  
200 Gillingham Lane  
Sugar Land, Texas 77478

SUBJECT: INSPECTION REPORT NO. 030-32023/08-001, OFFICE OF INVESTIGATIONS  
REPORT NO. 4-2008-031, AND NOTICE OF VIOLATION

Dear Mr. Dickes:

This refers to the inspection and investigation conducted at your facility in Rock Springs, Wyoming. The purpose of the inspection was to review the circumstances related to Schlumberger Technology Corporation's (Schlumberger) report of a lost fluid density gauge containing licensed material. The telephonic report was made to the NRC Headquarters Operations Center on October 4, 2007, and Schlumberger submitted a written report on November 15, 2007. The on-site portion of the inspection was conducted on January 29, 2008, followed by an investigation conducted by the NRC's Office of Investigations (OI). The inspection also included in-office review of the information obtained by OI. Enclosure 5 is a Factual Summary of the information obtained by OI. A final exit meeting was conducted telephonically with you on November 18, 2008. The enclosed report presents the results of this inspection and investigation (Enclosure 2).

This inspection examined activities conducted under your license as they relate to radiation safety and security, and to compliance with the Commission's rules and regulations, as well as the conditions of your NRC license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the information developed during the inspection and OI investigation, the NRC has determined that two apparent violations were identified and are being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The Enforcement Policy is included on the NRC's Web site at [www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html](http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html). The apparent violations are described in the enclosed inspection report, and involved failures to: (1) maintain required records complete and accurate as required by 10 CFR 30.9 and, (2) maintain control over licensed material as required by 10 CFR 20.1802. The first apparent violation is of particular concern because it may involve deliberate misconduct on the part of licensee personnel. Specifically, it appears a former well services radiation safety officer may have deliberately failed to conduct adequate inventories of licensed material which resulted in the record he developed documenting the inventory being inaccurate.

Before the NRC makes its enforcement decision, we are providing you an opportunity to either:  
(1) respond to the apparent violations addressed in this inspection report within 30 days of the

date of this letter, or (2) request a predecisional enforcement conference (PEC). If a conference is held, it will be closed to public observation and will be transcribed. Please contact Mr. Michael Vasquez at 817-860-8130 within 7 days of the date of this letter to notify the NRC of your intended response.

If you choose to provide a written response to the apparent violations, your response should be clearly marked as a "Response to Apparent Violations in Inspection Report No. 030-32023/2008-001; EA-08-261" and should include: (1) the reason for the apparent violation, or, if contested, the basis for disputing the apparent violation; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken to avoid further violations; and (4) the date when full compliance will be achieved. In presenting your corrective actions, you should be aware that the promptness and comprehensiveness of your actions will be considered in assessing any civil penalty for the apparent violations. The guidance in the enclosed excerpt from NRC Information Notice 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action," may be helpful. Your response may reference or include previously docketed correspondence, such as Schlumberger's Licensee Event Report, if the correspondence adequately addresses the required response. If an adequate response is not received within the time specified or an extension of time has not been granted by the NRC, the NRC will proceed with its enforcement decision or schedule a conference.

You should be aware that Section VII.A.1.g. of the NRC Enforcement Policy states that for violations involving the loss, abandonment, or improper transfer or disposal of a sealed source or device, the NRC will normally exercise discretion when proposing the imposition of a civil penalty of at least the base amount. Since the apparent violation involves the loss of a device, containing 7.4 gigabecquerel (200 mCi) of cesium-137, the NRC is considering proposing imposition of a civil monetary penalty. The base civil penalty amount is based on approximately three times the expected average cost of authorized disposal; however, the NRC may consider adjusting the civil penalty amount to a more appropriate base amount if you can demonstrate that three times the actual cost of disposal would be significantly less than the base amount. However, NRC will not normally decrease the civil penalty to an amount below the lowest base civil penalty for such cases, i.e., \$3,250.

Since the NRC has not made a final determination in this matter, no Notice of Violation (Notice) is being issued for the two apparent violations at this time. In addition, please be advised that the number and characterization of apparent violations described in the enclosed inspection report may change as a result of further NRC review. You will be advised by separate correspondence of the results of our deliberations on this matter.

Instead of a PEC, you may request alternative dispute resolution (ADR) with the NRC in an attempt to resolve this issue. ADR is a general term encompassing various techniques for resolving conflict outside of court using a neutral third party. The technique that the NRC has decided to employ is mediation. Additional information concerning the NRC's program is described in the enclosed brochure (NUREG/BR-0317) and can be obtained at <http://www.nrc.gov/about-nrc/regulatory/enforcement/adr.html>. The Institute on Conflict Resolution (ICR) at Cornell University has agreed to facilitate the NRC's program as an intake neutral. Please contact ICR at 877-733-9415 within 10 days of the date of this letter if you are interested in pursuing resolution of this issue through ADR.

In addition to the apparent violations, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. This violation was also evaluated in accordance with the NRC Enforcement Policy. The violation is not being considered for escalated enforcement action and is therefore being cited in the enclosed Notice. The circumstances surrounding it are described in detail in the subject inspection report.

You are required to respond to the Notice and should follow the instructions specified in the enclosed Notice when preparing your response. As discussed above, the information provided in the excerpt from the NRC Information Notice 96-28 may be helpful when preparing your response. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC's Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Sincerely,

***/RA/ by Charles L. Cain for***

Arthur T. Howell III, Director  
Division of Nuclear Materials Safety

Docket No. 030-32023  
License No. 42-27055-01

Enclosures:

- (1) Notice of Violation
- (2) Inspection Report
- (3) Excerpt from NRC Information Notice 96-28
- (4) NUREG/BR-0317
- (5) Factual Summary, OI 4-2008-031

cc: Texas Radiation Control Program Director  
Wyoming Radiation Control Program Director

**DISTRIBUTION:**

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<a href="mailto:Bill.Maier@nrc.gov">Bill.Maier@nrc.gov</a>	<a href="mailto:Randy.Erickson@nrc.gov">Randy.Erickson@nrc.gov</a>	<a href="mailto:Michelle.Burgess@nrc.gov">Michelle.Burgess@nrc.gov</a>
<a href="mailto:Victor.Dricks@nrc.gov">Victor.Dricks@nrc.gov</a>	<a href="mailto:Linda.Mclean@nrc.gov">Linda.Mclean@nrc.gov</a>	
<a href="mailto:Marissa.Herrera@nrc.gov">Marissa.Herrera@nrc.gov</a>	<a href="mailto:Rick.Munoz@nrc.gov">Rick.Munoz@nrc.gov</a>	<a href="mailto:RIDSOEMailCenter.Resource@nrc.gov">RIDSOEMailCenter.Resource@nrc.gov</a>
<a href="mailto:R4ALLEGATION.resource@nrc.gov">R4ALLEGATION.resource@nrc.gov</a>		

NMSB-A Inspector(s)  
RIV Materials Docket File (5th Floor)

SUNSI Review Completed: ADAMS:  Yes      Initials: RRM  
 Publicly Available       Non-Sensitive

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RIV:DNMS:NMSB-A	AC:NMSB-A	ACES:ES	RC
RRMuñoz	GMVasquez	MCMaier	KSFuller
<i>/RA/</i>	<i>/RA/</i>	<i>/RA/</i>	<i>/RA/</i>
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## NOTICE OF VIOLATION

Schlumberger Technology Corporation  
Sugar Land, Texas

Docket No. 030-32023  
License No. 42-27055-01  
EA-08-261

During an NRC inspection and investigation conducted January 29, 2008, through November 18, 2008, one violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

10 CFR 71.5(a) requires, in part, that each licensee who transports licensed material outside of the site of usage, shall comply with the applicable DOT regulations in 49 CFR, Parts 107, 171 through 180, and 390 through 397.

49 CFR 172.203(d)(5) requires, in part, that the description for a shipment of a Class 7 (radioactive) material must include the transport index assigned to each package in the shipment bearing RADIOACTIVE YELLOW-II or RADIOACTIVE YELLOW-III labels.

Contrary to the above, on various dates in calendar years 2006 and 2007, the licensee transported licensed Class 7 (radioactive) material outside of the site of usage in packages bearing the Radioactive Yellow-II label without the transport index assigned to the packages as required.

This is a Severity Level IV violation (Supplement V).

Pursuant to the provisions of 10 CFR 2.201, Schlumberger Technology Corporation is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-001 with a copy to the Regional Administrator, Region IV, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation; EA-08-261" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken to avoid further violations; and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC's Web site at [www.nrc.gov/reading-rm/adams.html](http://www.nrc.gov/reading-rm/adams.html), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary

Enclosure 1

information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information).

In accordance with 10 CFR 19.11, you are required to post this Notice within two working days.

Dated this 1st day of December 2008

U.S. Nuclear Regulatory Commission  
Region IV

Docket No.: 030-32023  
License No.: 42-27055-01  
Report No.: 2008-001  
Licensee: Schlumberger Technology Corporation  
Facility: Corporate Office – Sugar Land, Texas  
Location: Field Office - Rock Spring, Wyoming  
Dates: January 29, 2008 through November 18, 2008  
Inspector: Rick Munoz, Health Physicist  
Nuclear Materials Safety Branch - A  
Approved By: Michael Vasquez, Chief  
Nuclear Materials Safety Branch - A  
Enclosure: Supplemental Inspection Information

## EXECUTIVE SUMMARY

### Schlumberger Technology Corporation (Schlumberger) NRC Inspection Report 030-32023/08-01

This report describes the circumstances surrounding an event involving the loss of a cesium-137 fluid density gauge from Schlumberger's field station located in Rock Springs, Wyoming. The event was reported to the NRC on October 4, 2007, and documented in a Licensee Event Report submitted to the NRC on November 15, 2007. NRC performed a site inspection, an investigation, and in-office review of all information obtained.

#### Program Overview

Schlumberger is authorized by NRC Materials License 42-27055-01 for the possession and use of cesium-137 used for density measurements in Thermo MeasureTech or Ronan Engineering compatible gauging devices for fluid density measurements at several specific use and storage locations and at temporary jobsites anywhere in the United States where the NRC maintains jurisdiction for regulating the use of licensed material. Schlumberger also possesses an oil and gas well-logging license and multiple Agreement State licenses to conduct similar activities in various Agreement States. (Section 1)

#### Licensee Response to Event

The licensee's report to the NRC dated November 15, 2007, described an extensive search for the lost fluid density gauge (densitometer). The findings of the licensee's internal investigation, probable cause analysis of the event, and any potential for public exposures above the public dose limits were included in the report. In addition, the licensee detailed the corrective actions implemented as part of the preventive measures to prevent recurrence. (Section 2)

#### Contributing Causes

The licensee concluded that contributing causes of the event included: (1) the former site Radiation Safety Officer (RSO) failed to follow procedures and confirm the serial numbers of the gauges when performing the physical inventories on February 6, and August 14, 2007, and potentially other inventories before that time frame; (2) employees, at times, shipped gauges on vehicles to well sites without completing the required shipping documentation; and (3) employees did not consistently follow the company's prescribed security procedures for densitometers during transport and while at well sites. As a result, inadequate source accountability and source shipments occurred. (Section 2)

#### Inspection Findings Considered for Escalated Enforcement

- From February 6, 2007, through August 14, 2007, the licensee failed to maintain complete and accurate records of inventories to account for licensed material at the Rock Springs, Wyoming location. This was identified as an apparent violation of 10 CFR 30.9. (Section 3)
- As of October 4, 2007, the licensee failed to control and maintain constant surveillance of licensed material that was in a controlled or unrestricted area and that was not in storage. This was identified as an apparent violation of 10 CFR 20.1802. (Section 3)

### Inspection Findings Not Considered for Escalated Enforcement

The licensee transported licensed material outside of the site of usage without the required shipping document information including the appropriate transport index. This was identified as a violation of 10 CFR 71.5 and 49 CFR 172.203(d)(5). (Section 3)

### Corrective Actions for Findings Considered for Escalated Enforcement

- The licensee conducted an extensive search for the gauge, and offered a monetary reward for the recovery of the densitometer.
- Schlumberger conducted a complete physical and photographic inventory of all its density gauges in all locations in the United States and Canada.
- A revision of the RSO reporting structure such that the site well services RSO will report directly to the Quality Health Safety & Environmental coordinator.
- The licensee appointed a new well services RSO in the Rock Springs, Wyoming, office replacing the individual deemed responsible for the inadequate inventories.
- The licensee implemented a new storage log system to account for the movement of all gauges to well sites from the authorized storage location.
- The licensee stated it would provide remedial training on radiation safety and control of licensed material to include preparing a training package covering this specific event, findings, and corrective actions. This training was to be presented to all employees working with gauges at all Schlumberger offices in the United States by April 30, 2008.
- The licensee implemented a program to conduct physical inventories every three months which will include a date-time-stamped photograph of each gauge every twelve months. (Section 4)

### Corrective Actions for Findings Not Considered for Escalated Enforcement

The licensee provided training to its staff regarding transportation requirements and associated company policies to ensure requirements are met. (Section 4)

## Report Details

### **1 Program Overview (87114)**

#### **1.1 Inspection Scope**

The inspector reviewed the license application, supporting documents, the licensee's Licensee Event Report (LER) and other records provided by the licensee. Collectively, these documents describe the licensee's radiation safety program and actions taken as a result of the event.

#### **1.2 Observations and Findings**

Schlumberger Technology Corporation (Schlumberger) is a global technology services company with corporate offices in New York, Paris, and The Hague, and has more than 80,000 employees working in nearly 100 countries. Schlumberger is authorized by NRC Materials License 42-27055-01 (license) to use cesium-137 (Cs-137) for density measurements in Thermo MeasureTech or Ronan Engineering compatible gauging devices at specific use and storage locations and at temporary jobsites anywhere in the United States where the NRC maintains jurisdiction for regulating the use of licensed material, including areas of exclusive Federal jurisdiction within Agreement States. Schlumberger also possesses a 10 CFR Part 39 license and multiple Agreement State licenses to conduct similar activities in various Agreement States. Rock Springs, Wyoming, is an authorized field office location specifically listed on the license. At the Rock Springs field office, there are two site Radiation Safety Officers (RSO). One is responsible for the wire line services, the other for well services. The well services RSO manages the radiation protection program related to the density gauges.

### **2 Licensees' Event Report (87103)**

Schlumberger reported a missing fluid density gauge (gauge or densitometer) to the NRC Headquarters Operations Center on October 4, 2007, and subsequently submitted an LER on November 15, 2007. The report was submitted under the requirements of 10 CFR 20.2201, in regard to a lost gauge from its Rock Springs, Wyoming, field office. The missing Thermo MeasureTech Model 5192 gauge (serial number D111), contained a 7.4 gigabecquerel (GBq) (200 mCi) Cs-137, sealed source (assayed on 2/25/82), within its shielded housing.

#### **2.1 Licensee's Response to the Event**

Schlumberger was not aware that the gauge was missing until a new site well services RSO conducted an inventory at the Rock Springs facility on October 2, 2007. The October 2 inventory revealed that a locked box container, within the facility's secured storage location, contained only two gauges when it was previously reported to contain three gauges. Although the previous site well services RSO documented a physical inventory with source information on the record, Schlumberger determined that the individual did not follow procedures in visually confirming the serial number of the densitometer when performing the physical inventory conducted on February 6, and August 14, 2007. The report further stated that Schlumberger determined that it could not

rely on any physical inventory recorded by this individual to establish the last date the missing gauge was physically present at the Rock Springs facility.

The fluid density gauge was never recovered. Based on information presented by the licensee's event report dated November 15, 2007, the two most probable explanations for the loss of the fluid density gauge were that the gauge was (1) inadvertently left at a well site during a temporary job or (2) lost from a vehicle during transport. Schlumberger ruled out theft from its storage facility because there had never been any breach of the secured lock box storage area. In addition, the licensee confirmed through its internal investigation, that the lost gauge had not been shipped from the Rock Springs, Wyoming, facility to any Schlumberger location outside the United States.

## 2.2. Licensee's Contributing Causes of the Event

According to Schlumberger's LER, the root causes for the eventual loss of the gauge were: the former site well services RSO did not follow procedures and confirm the serial numbers of all fluid density gauges when performing the physical inventory on February 6, and August 14, 2007; employees shipped densitometers on vehicles to well sites without accurately completing the required shipping documents; although not a regulatory requirement, employees did not consistently follow the company's security procedures for densitometers during transport and while at well sites as prescribed by Schlumberger's policy; the site well services RSO did not perform radiation surveys of the densitometer's surface radiation levels to determine the appropriate Transport Index as required; and the site well services RSO, who also served as a maintenance technician, was not required to report to the Quality Health Safety and Environment Coordinator (QHSE Coordinator). The QHSE Coordinator was the primary advisor to the location manager on all compliance issues and responsible for reporting weaknesses in the radiation safety program. Schlumberger's failure to follow internal policy requirements were not identified as violations of NRC requirements.

## 3 **Inspection Findings**

### 3.1 Inspection Scope

On January 29, 2008, an inspection was conducted at a Schlumberger field office location in Rock Springs, Wyoming. Schlumberger's corporate office is located in Sugar Land, Texas. The inspection included a follow-up to Schlumberger's report of a missing fluid density gauge to the NRC Operations Center on October 4, 2007, and Schlumberger's written report regarding the missing gauge dated November 15, 2007. The inspector interviewed cognizant individuals associated with the event and reviewed the license application, supporting documents, and other records provided by the licensee.

Collectively, these documents described the actions taken as a result of the event and the licensee's radiation safety program. The inspector reviewed the licensee's possession, accountability, and transportation of licensed material, including the process used to conduct physical inventories of the material. A comprehensive review of all physical inventories for the Rock Springs, Wyoming, field office was conducted.

### 3.2 Observations and Findings

Schlumberger conducted a comprehensive investigation of the event. Its investigation focused on inventory control, security for gauges and the transportation of these devices.

Based on the investigation, six of seven Model 5192 densitometers and all ten Model 5190 densitometers had been accounted for at the Rock Springs, Wyoming, field office. The missing gauge was not assigned to a specific work crew but used as a spare on an as needed basis by multiple crews. The gauge was frequently stored for extended periods. When not in use, it was stored in a locked box container within the secured storage facility. All gauges at the Rock Springs, Wyoming, field office were locked in a shielded container when not in use. The lock box storage container, holding up to six density gauges, was heavy enough to require a forklift to move. According to Schlumberger, the former site well services RSO recorded a physical inventory for the fluid density gauge on February 6 and August 14, 2007. However, Schlumberger found that the former well services RSO failed to follow procedures and visually confirm the serial number of each gauge when performing the physical inventories. The RSO merely saw that the locked storage container housing the densitometers being stored had not been disturbed, and assumed the gauges were still in the container without opening the container to verify the densitometers were actually there. Based on this, Schlumberger determined that it could not rely on any physical inventory recorded by the RSO to establish when the gauge was physically present at the Rock Springs field office.

In September 2007, Schlumberger personnel found that the hasp on the door to the storage area located at the Reliance Road facility in Rock Springs had been found broken; however, the security of the gauge storage container had not been affected since the lock on the storage container was intact. Only authorized employees were issued keys to the locks into the storage area and the fluid density gauge storage container. Theft from the storage container was ruled out since the lock to the storage container was never compromised and remained intact. The storage container was moved to a new facility in Rock Springs on Yellowstone Road immediately after the broken hasp on the storage area door was discovered at the Reliance Road location. Although the storage container was moved to a new location, it was not opened until October 2, 2007, when the new well services RSO conducted routine compliance audit which included a physical inventory of the gauges assigned to the Rock Springs field office. The routine compliance audit began on October 3, 2007, and the inventory revealed that only two gauges were stored within the lock box storage container (serial numbers B5683 and B5684). A Thermo MeasureTech, Model 5192, fluid density gauge (serial number D111), was not in storage as recorded in the previous inventory record.

### 3.3 Observations and Findings Considered for Escalated Enforcement

- 3.3.1 10 CFR 20.1802 requires that the licensee control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage.

As of October 4, 2007, the licensee failed to control and maintain constant surveillance of its licensed material resulting in the loss of licensed material (a Thermo MeasureTech, Model 5192, fluid density gauge (serial number D111), containing 7.4 GBq (200 mCi) of Cs-137) located in Rock Springs, Wyoming. The failure to control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area was identified as an apparent violation of 10 CFR 20.1802. (030-32023/008-01)

- 3.3.2 Although the previous site well services RSO documented a physical inventory with the correct serial number on the record, the individual did not conduct an adequate physical inventory by not physically observing the densitometers, and confirming the serial number

of the densitometers when performing the physical inventories on February 6, and on August 14, 2007. As a result, the record that the former well services RSO had developed to document these physical inventories was inaccurate.

10 CFR 30.9 states that information required by a license condition to be maintained be complete and accurate in all material respects.

License Condition 15 of License No. 42-27055-01, issued May 1, 2006, states that the licensee shall conduct a physical inventory every 6 months to account for all sealed sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of the each inventory, and shall include the radionuclides, quantities, manufacturer's name and model numbers, and the date of the inventory. Although the licensee maintained the records of inventories, it appears that the required information was not accurate in all material respects. This was material because the license requires this information to be maintained. The failure to maintain complete and accurate information in all material respects was identified as an apparent violation of 10 CFR 30.9. (030-32023/008-02)

Independent of and prior to this event, the licensee changed its policy on physical inventories to require a physical inventory every three months and a physical inventory to include a date-time-stamped photograph of all sealed sources to be conducted annually. At the time Schlumberger submitted its report to NRC, it had completed an accurate physical and photographic inventory of all densitometers in all Schlumberger locations in the United States and Canada.

#### 3.4 Observations and Findings Related to Transportation

10 CFR 71.5(a) requires, in part, that each licensee who transports licensed material outside of the site of usage, shall comply with the applicable DOT regulations in 49 CFR, Parts 107, 171 through 180, and 390 through 397. 49 CFR 172.203(d)(5) requires, in part, that the description for a shipment of a Class 7 (radioactive) material must include the transport index assigned to each package in the shipment bearing RADIOACTIVE YELLOW-II or RADIOACTIVE YELLOW-III labels.

The licensee transported licensed material outside of the site of usage, as specified in NRC Materials license 42-27055-01, on various dates throughout calendar years 2006 and 2007, without the transport index assigned to the package as required by 172.203(d)(5).

The licensee found that at times, the former well services RSO did not perform surveys to determine the correct Transport Index for the package. Instead, workers just used previous shipping documents and copied a Transport Index that may not have applied to the gauge being shipped. As a result, on several occasions, the Transport Index on the package was not correct. The failure to transport licensed material outside the site of usage, as specified in the NRC license, or where transport is on public highways, without complying with the applicable requirements of 10 CFR 71.5 and with Department of Transportation (DOT) regulations in 49 CFR 172.203(d)(5), requiring the Transport Index, was identified as a violation. (030-32023/008-03)

### 3.5 Corrective Actions

Corrective Actions implemented by the licensee included but were not limited to: offering a monetary reward for the recovery of the densitometer; revising the RSO reporting structure where the site well services RSO will report directly to the Quality Health Safety & Environmental coordinator; appointing a new well services RSO; implementing a new storage log system to account for the movement of all gauges to well sites from the authorized storage location; and implementing an inventory program in which an inventory is to be conducted every three months and a date-time-stamped photograph of each gauge is to be taken every twelve months.

In addition, the licensee provided remedial training on radiation safety and control of licensed material to include preparing a training package covering this specific event, findings, and corrective actions. This training will be presented to all employees working with gauges at all Schlumberger offices in the United States by April 30, 2008. An internal follow-up audit to be conducted by the corporate radiation safety office was scheduled for June 30, 2008.

The licensee's corrective action for the transportation violation was to provide remedial training on the completion of shipping paper information. The licensee planned to complete this training by April 30, 2008.

### 4.0 Conclusions

Prior to October 2, 2007, the licensee failed to maintain complete and accurate inventory records to account for licensed material used for well service operations at the Rock Springs, Wyoming, location. This was identified as an apparent violation.

The licensee failed to control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that was not in storage. This was identified as an apparent violation.

The licensee transported licensed material outside of the site of usage without the completed required shipping document information including the appropriate transport index. This was identified as a violation.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

Joe McFarland, Site Well Services RSO  
Trent Abraham, Shop Supervisor  
Liliana Seres, Site Wireline RSO  
Allen Williams, QHSE Coordinator  
Raymond Dickes, Corporate RSO  
Thomas Wood, Corporate Deputy RSO  
Mauricio Macosay-Zavala ,Wireline Supervisor

INSPECTION PROCEDURES USED

IP 87113 Well Logging Programs  
IP 87114 Fixed and Portable Gauge Programs  
IP 87103 Inspection of Material Licensees Involved in and Incident or Bankruptcy

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

030-32023/008-01	APV	An apparent violation involving the loss and control of licensed material.
030-32023/008-02	APV	An apparent violation involving providing incomplete or inaccurate information.
030-32023/008-03	VIO	A violation involving the failure to transport licensed material outside of the site of usage without the completed required shipping document information.

Closed

None

Discussed

None

LIST OF ACRONYMS USED

APV	Apparent Violation
CFR	Code of Federal Regulations
EA	Enforcement Action
NRC	Nuclear Regulatory Commission
OI	Office of Investigations
QHSE	Quality, Health, Safety and Environment

RSO            radiation safety officer  
SOP            Standard Operating Procedures  
VIO            Violation

**FACTUAL SUMMARY**  
**OI INVESTIGATION 4-2008-031**

On March 3, 2008, the Nuclear Regulatory Commission (NRC), Office of Investigations (OI), Region IV, initiated an investigation to determine whether willfulness was associated with apparent violations of NRC requirements committed by employees of Schlumberger Technology Corporation (Schlumberger). Specifically, the investigation was conducted to determine if Schlumberger's former site Radiation Safety Officer (site RSO) for its Rock Springs, Wyoming, facility willfully falsified inventory documents and additionally to ascertain if Schlumberger employees willfully failed to complete required Department of Transportation (DOT) shipping papers.

When interviewed by an OI Special Agent, the site RSO admitted that in August 2007 he did not follow procedures to conduct an inventory of the sealed sources at the Rock Springs facility, in that he did not physically identify each sealed source and its corresponding model number. The site RSO also admitted that he falsified the inventory records by entering data to indicate that the inventory had been completed, when in actuality the inventory had not been completed.

These circumstances indicate that the Schlumberger site RSO appears to have engaged in deliberate misconduct, in violation of 10 CFR 30.10(a)(1) and (a)(2) of the NRC's "Deliberate misconduct" rule.

In the matter of the DOT shipping records, Schlumberger employees are required to complete Hazardous Material Shipping Documents anytime radioactive material is transported from one location to another location. Previous instruction on how to complete these shipping documents had been provided to the Schlumberger employees but it was inconsistent and was not emphasized. A review of a sampling of DOT shipping papers and interviews of Schlumberger employees, whose job positions required them to fill out shipping papers, demonstrated that the employees had simply copied information from previously prepared shipping papers. It was widespread and not an isolated incident to fail to properly complete DOT shipping papers for each conveyance. It was determined to be a shortcoming of the training previously provided by Schlumberger to the drivers and technicians.

Based on the evidence developed, the allegation that Schlumberger employees willfully failed to complete DOT shipping documents was not substantiated.