



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

August 24, 2016

Mr. Matthias Kraneiss
Corporate Radiation Safety Officer
Petrochem Inspection Services, Inc.
1475 East Sam Houston Parkway South
Pasadena, TX 77503

SUBJECT: NRC ROUTINE INSPECTION REPORT NO. 03036565/2016001(DNMS) –
PETROCHEM INSPECTION SERVICES, INC.

Dear Mr. Kraneiss:

On July 11, 2016, an inspector from the U.S. Nuclear Regulatory Commission (NRC) conducted a routine inspection at your field office in Erie, Michigan. The purpose of the inspection was to review activities performed under your NRC license to ensure that activities were being performed in accordance with NRC requirements. On July 29, 2016, Mr. Ryan Craffey of my staff conducted an exit meeting by telephone with Mr. Mark Soviar of your staff to discuss the inspection findings. The enclosed inspection report presents the results of the inspection.

During this inspection, the NRC staff examined activities conducted under your license related to public health and safety. The staff also examined your compliance with the Commission's rules and regulations as well as the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC identified one unresolved item regarding the use of Instadose devices to satisfy regulatory requirements for personnel monitoring during radiographic operations. The item is described in the enclosed report. The NRC will continue to review this open item and you will be advised by separate correspondence of the results of our deliberation on this matter. Because this item remains under NRC review, you are not required to respond to this matter at this time. Please be advised that the number and characterization of the issues described in the report may change as a result of further NRC review.

In accordance with Title 10 of the *Code of Federal Regulations* (CFR) Section 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC's Public

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M Kraneiss

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Please feel free to contact Mr. Craffey of my staff if you have any questions regarding this inspection. Mr. Craffey can be reached at 630-829-9655.

Sincerely,

/RA Geoffrey Warren Acting for/

Aaron T. McCraw, Chief
Materials Inspection Branch
Division of Nuclear Materials Safety

Docket No. 030-36565
License No. 42-32507-01

Enclosures:

1. IR 03036565/2016001(DNMS) (public)
2. Security Addendum (non-public)

cc w/encls: Mark Soviar
cc w/encl 1: State of Michigan

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M Kraneiss

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Letter to Matthias Kraneiss from Aaron McCraw dated August 24, 2016

SUBJECT: NRC ROUTINE INSPECTION REPORT NO. 03036565/2016001(DNMS) –
PETROCHEM INSPECTION SERVICES, INC.

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**U.S. Nuclear Regulatory Commission
Region III**

Docket No. 030-36565

License No. 42-32507-01

Report No. 03036565/2016001(DNMS)

Licensee: Petrochem Inspection Services, Inc.
d/b/a TUV SUD America, Chemical Oil & Gas

Facility: 160 B Lavoy Road, Erie, Michigan

Inspection Date: July 11, 2016

Exit Meeting Date: July 29, 2016

Inspector: Ryan Craffey, Health Physicist

Approved By: Aaron T. McCraw, Chief
Materials Inspection Branch
Division of Nuclear Materials Safety

Enclosure 1

EXECUTIVE SUMMARY

**Petrochem Inspection Services, Inc.
NRC Inspection Report 03036565/2016001(DNMS)**

This was a routine inspection of a non-destructive testing company authorized by U.S. Nuclear Regulatory Commission (NRC) Materials License No 42-32507-01 to use byproduct material in NRC jurisdiction for industrial radiography. The inspection included a review of the implementation of the radiation safety program at the company's field office in Erie, Michigan.

During the inspection, the inspector identified one unresolved item regarding the licensee's use of Instadose devices to satisfy regulatory requirements for personnel monitoring during radiographic operations.

This unresolved item remains under NRC review.

REPORT DETAILS

1 Program Overview and Inspection History

Petrochem Inspection Services, Inc. (PCIS) d/b/a TUV SUD America, Chemical Oil & Gas was authorized by NRC Materials License No. 42-32507-01 to use byproduct material in NRC jurisdiction for industrial radiography. The licensee's Corporate Radiation Safety Officer (RSO) and other corporate staff were based in Pasadena, Texas. The licensee also maintained two field offices in NRC jurisdiction: one in Erie, Michigan, and another in Billings, Montana. At the time of the inspection, the licensee had three radiographers and three assistants on staff in Erie, though most performed radiography and other non-destructive testing across the border in Ohio. The licensee also had four radiographers on staff in Billings, a facility which was added to the license in June 2016.

The NRC last inspected PCIS on July 20, 2015, and before that on July 31, 2014. Security related violations were identified during the 2014 inspection, and were reviewed and closed during the 2015 inspection.

2 Personnel Monitoring

2.1 Inspection Scope

On July 11, 2016, the inspector reviewed the licensee's use of personnel monitoring devices. The inspector conducted interviews with members of the licensee's radiation safety staff, examined a selection of the licensee's calibrated and operable devices, and reviewed a selection of related records.

2.2 Observations and Findings

On October 5, 2015, the licensee began using Instadose direct ion storage dosimeters to determine the dose of record for radiographers and radiographers' assistants. The licensee discontinued the use of film badges exchanged monthly shortly after, on November 1, 2015.

Given the nature of the Instadose device, the licensee had no need to exchange or replace these devices periodically. Instead, the licensee instructed its monitored staff to download a record of their dose via an integral USB connection weekly via the Instadose website.

Title 10 of the *Code of Federal Regulations* (10 CFR) Section 34.47(a) states, in part, that the licensee may not permit any individual to act as a radiographer or a radiographer's assistant unless, at all times during radiographic operations, each individual wears, on the trunk of the body, a direct reading dosimeter, an operating alarm ratemeter, and a personnel dosimeter that is processed and evaluated by an accredited National Voluntary Laboratory Accreditation Program (NVLAP) processor.

Title 10 CFR Section 34.47(a)(3) states that film badges must be replaced at periods not to exceed one month and other personnel dosimeters processed and evaluated by an accredited NVLAP processor must be replaced at periods not to exceed three months.

The use of Instadose devices since October 5, 2015 relative to the above regulatory requirements is an unresolved item, which remains under NRC review.

The inspector reviewed occupational exposure records for individuals based at the Erie office. The maximum annual whole-body exposures were 439 millirem in 2015, and 851 millirem in 2016 to date. The inspector also reviewed documentation of pocket dosimeter and alarming ratemeter calibrations.

2.3 Conclusions

The inspector identified one unresolved item regarding the licensee's use of Instadose devices to satisfy regulatory requirements for personnel monitoring during radiographic operations

3 **Other Areas Inspected**

3.1 Inspection Scope

On July 11, 2016, the inspector toured the licensee's field office in Erie, Michigan, conducted interviews with members of its radiation safety staff, examined a selection of radiographic equipment, and reviewed a selection of relevant records.

3.2 Observations and Findings

The inspector conducted independent surveys using a Thermo Fischer Scientific RadEye G meter (calibrated on April 22, 2016). Readings at the surface of the licensee's QSA 880 Delta cameras were consistent with those indicated in the applicable Safety Evaluation in the Sealed Source and Device Registry. Readings in unrestricted areas in the vicinity of the camera storage area were indistinguishable from background.

The inspector was unable to observe the conduct of any radiographic operations, as the licensee rarely worked in NRC jurisdiction and had no such work scheduled or in progress at the time of the inspection. Instead, the licensee's staff demonstrated the implementation of licensee procedures for equipment maintenance, survey meter use, transportation of licensed material, and radiographer training. The inspector found through these observations and other discussions that the staff was knowledgeable and conscientious of radiation protection principles and licensee procedures.

The inspector also reviewed a selection of records, including quarterly safety audits (incorporating sealed source inventories and leak tests, equipment maintenance, refresher training and area surveys) and initial training documentation for the licensee's newest hire, an assistant radiographer hired in February 2016.

3.3 Conclusions

The inspector reviewed other areas of the licensee's radiation safety program and had no findings in this area.

4 Exit Meeting Summary

The NRC inspector presented preliminary inspection findings at the conclusion of the onsite inspection on July 11, 2016, and again during an exit meeting by telephone on July 29, 2016. The licensee did not identify any documents or processes reviewed by the inspectors as proprietary. The licensee acknowledged the findings presented.

LIST OF PERSONNEL CONTACTED

Matthias Kraneiss – Corporate RSO

Isiah Murphy – Site RSO (Billings)

Mark Soviar - Site RSO (Erie)

Participated in exit meeting by telephone on July 29, 2016.

INSPECTION PROCEDURES USED

87121: Industrial Radiography Programs