UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

July 17, 2003

CONSOL Energy Inc.
ATTN: Joseph M. Richards
Corporate Safety Department
Consol Plaza
1800 Washington Road
Pittsburgh, PA 15241-1421

SUBJECT: NRC INSPECTION REPORT NO. 999-90002/03-01

Dear Mr. Richards:

This refers to the special inspection conducted on June 17-19, 2003, at your Buchanan Mine Preparation Plant located in Mavisdale, Virginia. The purpose of the inspection was to review the circumstances surrounding an event regarding the loss of a generally-licensed industrial gauge containing byproduct material. This event was reported to the U. S. Nuclear Regulatory Commission's (NRC) Operations Center and Region II office on June 11, 2003. At the conclusion of the inspection, the findings were discussed with you and other licensee representatives.

The inspection was an examination of activities as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license as they related to this incident. Within these areas, the inspection consisted of selective examinations of procedures and representative records and interviews with personnel.

Based on the results of the inspection, one apparent violation was identified involving the unauthorized transfer or disposal of licensed material under 10 CFR 31.5(c)(8)(i).

Our review of the circumstances surrounding this apparent violation continues. Since the NRC has not made a final determination in this matter, no Notice of Violation is being issued for these inspection findings at this time. In addition, please be advised that the number and characterization of the apparent violation 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. No response regarding these apparent violations is required at this time.

CONSOL Energy Inc.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response should you choose to provide one, will be made 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).

Should you have any questions concerning this letter, please contact me at (404) 562-4721.

Sincerely,

/RA/

Thomas R. Decker, Chief
Materials Licensing/ Inspection Branch 1
Division of Nuclear Materials Safety

Docket No.: 999-90002
License No.: General License (10 CFR 31.5)

Enclosure: NRC Inspection Report
No. 999-90002/03–01

cc w/encl:
Commonwealth of Virginia

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	999-90002
License No.:	General License (10 CFR 31.5)
Report No.:	999-90002/03-01
Licensee:	CONSOL Energy Inc.
Location:	Consolidated Coal Co. Buchanan Mine Preparation Plant Mavisdale, Virginia
Date:	June 17-19, 2003
Inspectors:	Bryan A. Parker, Health Physicist Materials Licensing/Inspection Branch 1 Division of Nuclear Materials Safety Richard Gibson, Jr., Health Physicist Materials Licensing/Inspection Branch 1 Division of Nuclear Materials Safety
Approved by:	Thomas R. Decker, Chief Materials Licensing/Inspection Branch 1 Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

CONSOL Energy Inc.
Consolidated Coal Co. - Buchanan Mine Preparation Plant
NRC Inspection Report No. 999-90002/03-01

This special, announced safety inspection was conducted on June 17-19, 2003, to evaluate the circumstances surrounding the loss of a generally-licensed industrial gauge that contained approximately 325 millicuries (mCi) (decay-corrected from a nominal 500 mCi on the gauge label) of cesium-137 (Cs-137). One apparent violation was identified for an unauthorized transfer or disposal (loss) of generally-licensed material to an unknown source under 10 CFR 31.5(c)(8)(i).

On January 29, 2003, the licensee removed the gauge from its mounting, with the shutter padlocked closed, and placed it in an unlocked storage building with the intention of properly disposing of it at a later date. On June 2, 2003, the licensee went to retrieve the gauge and could not locate it in the storage area. After initially searching for the gauge, the licensee declared it missing on June 4, 2003, and continued the search. On June 11, 2003, the licensee officially notified the NRC Operations Center of the event.

On June 17, 2003, two Region II inspectors were dispatched to the site and searched for the gauge both visually and with survey instruments; however, the gauge was not located.
On June 18, 2003, the inspectors visited a local landfill where some waste from the plant was routinely shipped. At the landfill, the inspectors reviewed the installed system for detecting incoming radioactive material and found it to be adequate and operable. The landfill operator indicated that they had not had any radiation alarms during the timeframe that the gauge went missing.

After the inspection, the inspectors reviewed the possibility of the gauge going to the plant's contracted scrap metal dealer. Inspectors interviewed the manager of the scrap dealer, who described in detail their process for monitoring for incoming radioactive material. From that interview, it appeared unlikely that the gauge was taken there.

The loss of the gauge to the public domain has a low-to-medium actual safety significance because radiation measurements at one foot from any surface of the device (by design - see Registry of Radioactive Sealed Sources and Devices Sheet No. TX-0634-D-139-B) were less than 5.0 millirem per hour with maximum loading (500 mCi). Measurements taken by the inspectors of similar devices still installed at the Prep Plant confirmed this. However, if the shutter was inadvertently or deliberately opened, and/or the source removed from its shielded holder, exposure potential to a member of the public rises significantly. In addition, if the source capsule was ruptured and/or melted, it could cause a significant contamination event. Either or both of these scenarios could result in release of the radioactive material and exposure of members of the public to radiation levels in excess of NRC limits.

Attachments:
List of Persons Contacted
Inspection Procedure Used

REPORT DETAILS

1. Program Scope

The licensee is authorized to possess and use radioactive material under a General License for the purpose of detecting, measuring, gauging or controlling certain industrial processes (10 CFR 31.5). The licensee possessed six generally-licensed fixed gauges, five of which were in use at the time of the inspection and the sixth being the missing gauge. Four of the five in use contained 30 - 500 mCi of Cs-137, and the fifth contained 20 mCi of Cs-137 and 300 mCi of americium-241. The missing gauge was a TN Technologies (formerly Texas Nuclear) Model 5202, Series SG, Serial No. B174, containing approximately 325 mCi (decay-corrected from a nominal 500 mCi on the gauge label) of Cs-137.

2. Circumstances Surrounding the Loss of the Generally-Licensed Gauge

a. Scope

The inspector reviewed licensee records and interviewed knowledgeable licensee representatives at the licensee's Mavisdale, Virginia facility to evaluate the apparent loss of the gauge.

b. Observations and Findings

During the late night and early morning of January 28-29, 2003, the licensee's consultant padlocked the shutter closed and removed the gauge from its mounting. The gauge was then taken to the Flocculant (Floc) Building and placed into storage with the intention of properly disposing of it. The Floc Building was used to store other equipment and material, but was not locked. On June 2, 2003, the licensee went to retrieve the gauge in order to prepare it for disposal and could not locate it in the Floc Building. After initially searching for the gauge, the licensee declared it missing on June 4, 2003. The licensee continued the search and began interviewing all employees at the Buchanan Mine Prep Plant. On June 11, 2003, the licensee officially reported the lost source event to the NRC Operations Center.

On June 17, 2003, two Region II inspectors were dispatched to the site of the gauge loss and searched for the gauge both visually and with survey instruments. The search was focused in and around the Floc Building and all other known storage areas indoors and outdoors at the Prep Plant. Other random areas were searched and surveyed as well, but the gauge was not located. The inspectors also interviewed the plant manager, a company safety representative, and the licensee's consultant. These interviews focused on the circumstances surrounding the event and the possible whereabouts of the gauge. At the time of the inspection, the licensee was completing interviews with all 49 employees at the plant, but no new information had been discovered from those interviews.

The inspectors noted that there were two waste streams from the plant that the gauge could have gone through. One of these was a scrap metal contractor, Mansbach Metal Company in Ashland, Kentucky. Mansbach periodically picked up scrap metal from the plant, including during the January - June timeframe in which the gauge went missing. On June 19, 2003, the inspectors interviewed the Mansbach plant manager by phone, who described their process for monitoring for incoming radioactive material. Scrap metal going to Mansbach is essentially scanned three times for radioactivity. Initially while a truck is being weighed, it is scanned by sodium iodide detectors. After a truck is unloaded, the scrap is taken by conveyor to a shredder that breaks the metal into small pieces. Prior to reaching the shredder the metal passes over an array of radiation detectors and if radiation significantly above background is detected, the conveyor system shuts down so operators can investigate the alarm. Finally, the processed metal is reloaded onto trucks and scanned once more while being weighed before leaving the facility, where it is taken to steel mills for reuse. The Mansbach plant manager indicated that they had not had any recent radiation alarms, and did not maintain a "backlog" of scrap to be processed. Based on this interview, the inspectors determined that it was unlikely the gauge went to the Mansbach scrap facility. In addition, it should be noted that most steel mills have radiation monitoring systems to prevent radioactive material from entering the smelters.

The other waste stream from the Buchanan Mine Prep Plant was through an industrial waste hauler which routinely picked up other non-scrap metal waste from the plant (approximately 39 times between January and June 2003). The hauler, H&K Trucking of Oakwood, Virginia (H&K), was contracted by Consolidated Coal. H&K hauled the waste material by truck to the Buchanan Transfer Station (BTS), which is operated by the Cumberland Plateau Regional Waste Authority (CPRWA). There, the waste was unloaded and reloaded into larger waste hauling trucks operated by Southwest Disposal of Castlewood, Virginia, which is contracted by the landfill where the material is disposed. The inspectors interviewed management representatives of the CPRWA and BTS by phone, and according to those interviews, the workers at BTS do not sort or segregate waste, but simply move it from one truck to another. However, management representatives did concede that workers do occasionally "scrounge" for certain items such as scrap metal or other useful things during the transition from the small trucks to the larger trucks. From discussions with the inspectors, the CPRWA management representative agreed to issue a memo and interview the workers to determine if anyone knew of the whereabouts of the gauge. The memo and interviews emphasized that the gauge needed to be located and that a "no questions asked" policy was in place. As of July 15, 2003, no further information about the gauge had come forth.

Once the non-scrap metal waste left BTS, it was transported to the Carter Valley Landfill in Hawkins County, Tennessee. The landfill is operated by Browning-Ferris Industries (BFI), which has experience nationwide monitoring for incoming radioactive material. The inspectors visited the landfill and discussed the event

with a landfill representative. The inspectors observed the operation of the system installed for detecting incoming radioactive material and found it to be adequate and operable. It consisted of two sodium iodide detectors, one on each side of the scales which each truck passed through while being weighed. The system appeared to be well-maintained and calibrated. The landfill representative indicated that they had not had any radiation alarms during the timeframe that the gauge went missing.

The loss of the gauge to the public domain has a low-to-medium actual safety significance because radiation measurements at one foot from any surface of the device (by design - see Registry of Radioactive Sealed Sources and Devices Sheet No. TX-0634-D-139-B) were less than 5.0 millirem per hour with maximum loading (500 mCi). Measurements taken by the inspectors of similar devices installed at the Prep Plant confirmed this. However, if the shutter was inadvertently or deliberately opened, and/or the source removed from its shielded holder, exposure potential to a member of the public would rise significantly. In addition, if the source capsule was ruptured and/or melted, it could cause a significant contamination event. Either or both of these scenarios could result in release of the radioactive material and exposure of members of the public to radiation levels in excess of NRC regulatory limits.

10 CFR 31.5(c)(8)(i) requires that any person who acquires, receives, possesses, uses or transfer material in a device pursuant to a general license shall transfer or dispose of the device containing byproduct material only by (1) export as provided by 10 CFR 31.5(c)(7); (2) transfer to another general licensee as authorized in 10 CFR 31.5(c)(9); or (3) transfer to a person authorized to receive the device by a specific license pursuant to 10 CFR Part 30 and 32 of this chapter or from an Agreement State. The licensee's loss of the gauge sometime during the period of January 29 - June 2, 2003, constituted an unauthorized transfer or disposal of licensed material, and was therefore identified as an apparent violation of 10 CFR 31.5(c)(8)(i).

c. Conclusion

The inspectors concluded that the licensee's loss of the generally licensed device was an apparent violation of 10 CFR 31.5(c)(8)(i).

EXIT MEETING SUMMARY

An exit meeting was held with licensee representatives on June 17, 2003. Additional followup to the event was discussed with the licensee, as well as the scrap metal contractor, the industrial waste contractor, and landfill management, as part of the inspection. Finally, on July 15, 2003, the licensee confirmed by telephone that the gauge had still not been located nor other pertinent information discovered despite its search efforts. The overall findings from the inspection were discussed, including the apparent violation. The licensee did not specify that any information reviewed during the inspection was proprietary in nature.

ATTACHMENT

1. PERSONS CONTACTED

Consol Energy

*Joe Richards, Corporate Safety Department
*Tom Burton, Plant Manager, Buchanan Mine Prep Plant
*Jeff Henderson, Consultant

Cumberland Valley Regional Waste Management Authority (including the Buchanan Transfer Station and H&K Trucking)

Roger Sword, Director, CPRWA
Gary Estep, Manager, BTS

BFI Carter Valley Landfill

Bruce Howard, Landfill Marketing & Sales

Mansbach Metal Co.

John Burton, Plant Manager

*Attended the June 17, 2003, Exit Meeting

2. INSPECTION PROCEDURE USED

IP 87124 Fixed and Portable Gauges

3. ABBREVIATIONS USED

Am-241	americium-241
CFR	Code of Federal Regulation
Cs-137	cesium-137
mCi	millicurie

Enclosure