



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

August 9, 2013

Docket No. 99990001

License No. Non-Licensee

Allen D. Robinson, P.E.
Director of Operations
Deepgreen West Virginia, Inc.
3455 East Broad Street
Columbus, OH 43213

SUBJECT: NRC INSPECTION REPORT NO. 99990001/2011024, DEEPGREEN WEST VIRGINIA, INC., GREENFIELDS COAL PROCESSING PLANT, PAGETON, WEST VIRGINIA

Dear Mr. Robinson:

This letter is regarding the report you made to the NRC on September 9, 2011, (Event Notice Number 47255), and includes the sequence of events, NRC's response, and the NRC's determination of the results. No reply to this letter is required.

On September 8, 2011, NRC was notified by Greenfields Coal Company (Greenfields), that they had discovered a gauge containing radioactive cesium-137 on the grounds of their leased coal processing facility, located in Pageton, WV. Deepgreen West Virginia, Inc. (Deepgreen) owns the property, and neither Greenfields nor Deepgreen are authorized to possess radioactive material at the site.

On September 9, 2011, an additional gauge was found at the site, and, at the request of the NRC, a representative from the State of West Virginia's Radiological Health Program responded to the site to ensure that the two gauges were safely stored and secured against unauthorized access. On September 13, 2011, the NRC commenced a reactive inspection and confirmed that the gauges were safely and securely stored on site and that there were no other gauges in the process buildings or the grounds immediately adjacent to the buildings. The inspectors determined that radiation exposures to individuals who may have come into contact with the gauges were likely within permissible dose limits for members of the public. On October 24, 2011, the manufacturer of the gauges, Berthold Technologies, USA, LLC, took possession and removed the two gauges from the site. On April 24, 2012, NRC conducted an additional site visit and located a third gauge. Deepgreen registered the gauge with the Conference of Radiation Control Program Director's Offsite Source Recovery Project, and on May 2, 2013, the third gauge was removed from site by a licensed contractor.

A review of the gauge manufacturer's records showed that in 2001, a company known as Deepgreen Minerals Corporation Proprietary, LTD, based in Perth, Australia, a former owner of the site, had purchased three density gauges under the general license requirements of 10 CFR 31.5, for use at the Pageton, WV, facility. With this information, the inspectors were able to confirm that the gauges found at the site were those installed by the manufacturer in 2001.

No records were found that would indicate that Deepgreen Minerals Corporation Proprietary, LTD, disposed of or transferred the gauges to another licensee. Based on the information gathered during the inspection, the NRC has concluded that Deepgreen Minerals Corporation, Proprietary, LTD, was the original owner of the gauges and failed to properly dispose of or transfer the gauges to another licensee as required by 10 CFR 31.5(c)(8).

The inspectors conducted multiple inquiries in an attempt to contact representatives of Deepgreen Minerals Corporation Proprietary, LTD, and found that the company no longer operates in the United States. Attempts by NRC staff to contact any of the principals of the company were unsuccessful. Under these circumstances, the NRC chose not to pursue enforcement action against Deepgreen Minerals Corporation Proprietary, LTD.

The NRC determined that the actions taken by Deepgreen West Virginia, Inc. and Greenfields Coal Company (non-licensees) were helpful in the recovery and disposition of the gauges and no violations of NRC requirements were identified regarding Deepgreen or Greenfields.

In accordance with 10 CFR 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 Public Document Room or from the NRC document system (ADAMS), accessible from the NRC website 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.

Current NRC regulations and guidance are included on the NRC's website at www.nrc.gov; select **Nuclear Materials; Med, Ind, & Academic Uses**; then **Regulations, Guidance and Communications**. The current Enforcement Policy is included on the NRC's website at www.nrc.gov; select **About NRC, Organizations & Functions; Office of Enforcement; Enforcement documents**; then **Enforcement Policy (Under 'Related Information')**. You may also obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-866-512-1800. The GPO is open from 8:00 a.m. to 5:30 p.m. EST, Monday through Friday (except Federal holidays).

Please contact Scott Wilson at 610-337-5136 if you have any questions regarding this matter.

Sincerely,

/RA/

Blake D. Welling, Chief
Materials Security and Industrial Branch
Division of Nuclear Materials Safety

Enclosure: Inspection Report No. 99990001/2011024

cc: Cecil Patterson, Greenfields Coal Company, Pageton Site Supervisor
Jason Frame, Chief of Radiological Health, West Virginia Radiological Health Program

No records were found that would indicate that Deepgreen Minerals Corporation Proprietary, LTD, disposed of or transferred the gauges to another licensee. Based on the information gathered during the inspection, the NRC has concluded that Deepgreen Minerals Corporation, Proprietary, LTD, was the original owner of the gauges and failed to properly dispose of or transfer the gauges to another licensee as required by 10 CFR 31.5(c)(8).

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cc: Cecil Patterson, Greenfields Coal Company, Pageton Site Supervisor
Jason Frame, Chief of Radiological Health, West Virginia Radiological Health Program

Distribution: D. J. Holody, RI

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DATE	08/09/13		08/09/13		08/09/13			

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Inspection No. 99990001/2011024
Docket No. 99990001
License No. Non-Licensee
Licensee: Deepgreen West Virginia, Inc.
Location: Rt. 161, Pageton, West Virginia
Inspection Dates: September 13, 2011 – July 23, 2013

Inspector:	<u><i>/RA B. D. Welling for/</i></u>	<u>08/09/13</u>
	Scott Wilson Health Physicist Materials Security and Industrial Branch Division of Nuclear Materials Safety	date
Inspector:	<u><i>/RA/</i></u>	<u>08/09/13</u>
	Randolph C. Ragland, Jr. Senior Health Physicist Materials Security and Industrial Branch Division of Nuclear Materials Safety	date
Approved By:	<u><i>/RA/</i></u>	<u>08/09/13</u>
	Blake Welling, Chief Materials Security and Industrial Branch Division of Nuclear Materials Safety	date

EXECUTIVE SUMMARY

Deepgreen West Virginia, Inc.
NRC Inspection Report No. 99990001/2011024

On September 8, 2011, the NRC was notified by Greenfields Coal Company (Greenfields), that they had discovered a gauge containing radioactive cesium-137 on the grounds of their leased coal processing facility, located in Pageton, West Virginia. The property is owned by Deepgreen West Virginia, Inc. (Deepgreen). Neither Greenfields nor Deepgreen are licensed to possess radioactive gauges.

On September 9, 2011, at the request of the NRC, a representative from the State of West Virginia's Radiological Health Program responded to the site to ensure the gauge was safely stored and secured against unauthorized access. On the same day, Greenfields employees reported the discovery of an additional gauge at the site. Greenfields employees secured the two gauges in a locked storage box. Deepgreen made a telephone report regarding the discovery of the gauges to the NRC Headquarters Operations Officer on September 9, 2011 (NRC Event No. 47255).

A review of the gauge manufacturer's records showed that a company known as Deepgreen Minerals Corporation Proprietary, LTD, based in Perth, Australia, a former owner of the site, had acquired and installed three density gauges under the general license requirements in 10 CFR 31.5 in 2001.

On September 13, 2011, NRC conducted a reactive inspection at the Pageton, West Virginia site. The inspector confirmed that the two gauges were safely and securely stored, that there were no other gauges present in the process buildings and grounds adjacent to the buildings, and determined that radiation exposures to site personnel were likely within the public radiation dose limits in 10 CFR 20.1301. On October 24, 2011, the gauge manufacturer removed the two gauges from the site.

On April 24, 2012, NRC conducted an additional site visit and located the third gauge. Deepgreen registered the gauge with the Conference of Radiation Control Program Director's Offsite Source Recovery Project, and on May 2, 2013, the third gauge was removed from the site by a licensed contractor.

One violation of NRC requirements was identified regarding the failure of Deepgreen Minerals Corporation Proprietary, LTD, to properly dispose of the gauges, or to transfer the gauges to another licensee as required by 10 CFR 31.5(c)(8). Efforts by the NRC to locate Deepgreen Minerals Corporation Proprietary, LTD, determined that the company was no longer conducting business in the United States, and the principals of the corporation could not be located. Under these circumstances, the NRC chose not to pursue enforcement actions against the former general licensee.

The NRC determined that the actions taken by Greenfields Coal Company and Deepgreen West Virginia, Inc. (non-licensees) were helpful in the recovery and disposition of the gauges and no violations of NRC requirements were identified regarding Deepgreen or Greenfields.

REPORT DETAILS

1.0 Event Overview and Background

On September 8, 2011, the NRC was notified by a representative of Greenfields Coal Company (Greenfields), that Greenfields employees had discovered a Berthold Technologies USA, LLC, Model LB7440D gauge containing a 30-millicurie cesium-137 sealed source in a scrap metal pile on the grounds of a coal processing facility located on Rt. 161, in Pageton, West Virginia (site). The property is owned by Deepgreen West Virginia, Inc. (Deepgreen), and is leased and operated as a coal processing facility by Greenfields. A review of NRC records showed that neither Greenfields nor Deepgreen are licensed to possess radioactive gauges.

On September 9, 2011, at the request of the NRC, a representative from the State of West Virginia's Radiological Health Program responded to the site to ensure the safety and security of the gauge. On the same day, Greenfields employees discovered an additional Model LB 7740D gauge on processing equipment on the site. Greenfields employees secured the gauges in a locked storage box and labeled it as radioactive material. Deepgreen owners reported the discovery of the gauges to the NRC Headquarters Operations Officer on September 9, 2011 (NRC Event No. 47255).

A review of the gauge manufacturer's records showed that a company known as Deepgreen Minerals Corporation Proprietary, LTD, (DMCP), based in Perth, Australia, had originally purchased three Berthold model LB 7440D gauges with serial numbers HE 681, HE 682, and HE 683, on September 6, 2001, and Berthold Technologies USA, LLC, the gauge manufacturer, installed the gauges at the site on January 30, 2002. The gauges were acquired under the general license requirements in 10 CFR 31.5 and were used to measure the density of coal.

2.0 Inspection Activities

a. Inspection Scope

This inspection was performed in accordance with Inspection Procedure 87103, "Inspection of Material Licensees Involved in an Incident or Bankruptcy Filing." The Focus Elements addressed included 05.01 through 05.14, as applicable. The primary focus of the inspection included a review of the circumstances related to the discovery of the gauges; site inspections to search for and recover an unaccounted-for gauge; ensuring the safety and security of the gauges; verifying that the gauges were removed from the site and transferred to a licensed entity; evaluating the magnitude of likely radiation exposures to members of the public who may have come into contact with the gauges; determining responsibility for the gauges; and assessing the need for NRC enforcement actions.

b. Observations and Findings

Site Inspection

On September 13, 2011, the NRC commenced a reactive inspection at the Pageton, West Virginia site. The inspector reviewed the circumstances related to the discovery of the gauges; attempted to locate the third gauge by conducting a search and performing radiation surveys of the buildings and grounds immediately adjacent to the processing buildings; confirmed that the gauges found on September 8 and 9, 2011, were safety and securely stored; and determined that radiation exposures to site personnel were likely within the limits established for members of the public in accordance with 10 CFR 20.1301. In response, Deepgreen, contracted with Berthold Technologies USA, LLC, the gauge manufacturer, for the disposal of the gauges. On October 24, 2011, Berthold took possession and removed the two gauges from the site.

On April 24, 2012, NRC conducted an additional site visit, which included radiation surveys and an extensive physical search of remote areas of the site that were not included in the original inspection. That inspection located the third Berthold model LB 7440D gauge, on the property several hundred yards southwest of the main processing buildings. Upon discovery, the gauge was placed in a locked metal box and labeled as radioactive material.

Following the discovery of the third gauge, Deepgreen registered the source with the Conference of Radiation Control Program Director's (CRCPD) Offsite Source Recovery Project, and on May 2, 2013, the third gauge was removed from the site by a licensed contractor.

Independent Dose Assessment

The inspectors evaluated potential dose that site workers (i.e., members of the public) may have received from the presence/storage of the gauges onsite. Information was gathered through interviews with Greenfields and Deepgreen staff regarding the amount of time that site personnel may have spent near the gauges, observations of where the gauges were located, and independent radiation surveys performed by the inspectors.

Contamination surveys performed by the inspectors and the contractors who removed the gauges from the site showed that there was no detectable loose removable contamination on any of the gauges. Therefore, the inspectors concluded that site personnel were not exposed to radioactive contamination.

The inspectors then performed an independent external dose assessment to estimate the potential dose to members of the public who handled or may have worked near the gauges. The gauges were found in scrap laydown areas at the site where individuals were unlikely to spend extended amounts of time. Using conservative estimates of radiation dose rates (e.g., 1 mrem per hour at one meter) and exposure times (e.g., 50 hours per year at one meter), the inspectors concluded that it was unlikely that any member of the public received a radiation dose that exceeded the public dose limit of 100 mrem per year listed in 10 CFR 20.1301.

Reports From Property Owner

Deepgreen West Virginia, Inc. reported the discovery of the gauges to the NRC Headquarters Operations Officer by telephone on September 9, 2011 (NRC Event No. 47255), and submitted a detailed written report to NRC on November 3, 2011 (ML11320A267). The written report documented Deepgreen West Virginia, Inc.'s investigation of the event and was sufficiently detailed to enable NRC to determine ownership of the gauges, and to assess potential radiation exposures to members of the public (e.g., site personnel).

In Office Review

Discussions with a representative of the West Virginia Department of Environmental Protection indicated that Deepgreen Minerals Corporation Proprietary, LTD, was a former owner of the site. Berthold Technologies USA, LLC, the gauge manufacturer, records, showed that three Berthold model LB 7440D gauges with serial numbers HE 681, HE 682, and HE 683, were purchased by Deepgreen Minerals Corporation Proprietary, LTD, on September 6, 2001, and installed by Berthold Technologies at the site on January 30, 2002. No records were found by NRC which would indicate that Deepgreen Minerals Corporation Proprietary, LTD, disposed of the gauges or transferred the gauges to another licensee. Based on that review, the inspectors concluded that Deepgreen Minerals Corporation Proprietary, LTD, were the original owners of the gauges and failed to properly dispose of or transfer the gauges to another licensee as required by 10 CFR 31.5(c)(8).

The inspectors conducted multiple internet searches and telephone calls in an attempt to contact representatives of Deepgreen Minerals Corporation Proprietary, LTD. The inspectors found that the company no longer conducts business in the United States and attempts by NRC staff to contact any of the principals of the company were unsuccessful.

Corrective Actions

Upon discovery of the first two gauges, Greenfields Coal Company recovered the gauges, placed them into secure storage, restricted access to the gauges, and contracted with Berthold Technologies USA, LLC, who took possession and removed the gauges from the site on October 24, 2011. Upon discovery of the third gauge, Deepgreen registered the source with the Conference of Radiation Control Program Director's (CRCPD) Offsite Source Recovery Project, and on May 2, 2013, the gauge was removed from the site by a licensed entity for disposal.

c. Conclusions

One violation of NRC requirements was identified. The violation involved the failure of Deepgreen Minerals Corporation Proprietary, LTD, to properly transfer or dispose of three generally licensed gauges as required by 10 CFR 31.5(c)(8). However, because Deepgreen Minerals Corporation Proprietary, LTD is no longer acting as a corporation in the United States and no representatives of the company could be located, NRC chose not to pursue enforcement actions against the former general licensee.

3.0 Exit Meeting

The inspectors discussed the conclusions described in this report with Allen D. Robinson, P.E., Director of Operations, Deepgreen West Virginia, Inc., during an exit meeting conducted by telephone on July 23, 2013.

PARTIAL LIST OF PERSONS CONTACTED

Deepgreen West Virginia, Inc.

#* Alan Robinson, PE, Director of Operations

Greenfields Coal Company

Cecil Patterson, Site Manager

Greg Bailey, Operations Consultant (Pioneer Engineering)

Equipment Operator 1

Equipment Operator 2

Equipment Operator 3

Equipment Operator 4

Equipment Operator 5

Coal Processing Facility Mechanic

Coal Processing (Tipple House) Supervisor 1

Coal Processing (Tipple House) Supervisor 2

Berthold Technologies, U.S.A., LLC

Mark Morgan, Radiation Safety Officer

West Virginia Radiological Health Program

Randy Curtis, Director

Donald Goldsmith, Health Physicist

West Virginia Department of Environmental Protection

Patty Keys, ERS II

Conference of Radiation Control Program Directors

Charles R. (Russ) Meyer, CHP, Technical Assistant

Environmental Health Unit Department of Health Radiation Safety Team, Melbourne, Australia

Derek Lightbody, Scientific Officer

Barker's Junk Company, Mabscott, WV

Cody Darby, Manager

NRC Staff

Scott Wilson, Health Physicist, NRC Region I

*Randolph C. Ragland, Jr., Senior Health Physicist, NRC Region I

in attendance at entrance meeting

* in attendance at exit meeting

INSPECTION PROCEDURE USED

IP 87103

LIST OF DOCUMENTS REVIEWED

- Berthold Technologies Licensee Selection Form, dated August 26, 2001.
- Berthold Technologies Sealed Source Leak Test Information Sheet, dated January 30, 2002.
- Berthold Technologies Training Attendance List and course syllabus, dated January 30, 2002.
- Berthold Technologies Installed Device Survey Records and Inspection of Devices forms, dated January 30, 2002.
- Sealed Source and Devices Safety Evaluation of Device, No. TN-1031-D-101-B, dated October 14, 2010.
- NMED Item Number 110468
- Event Notification Number 47255
Report of Theft or Loss of Licensed Materials Prepared by Deepgreen West Virginia, Inc., dated November 3, 2011 (ML11320A267).

NRC Survey Instrumentation Used

- Ludlum 2221 Analyzer, Serial No. 054828, with 44-10 Scintillation Probe, Serial No. 242867, Calibration Date: 09/22/2011
- Eberline RO2, Serial No. 0581, Calibration Date: 11/05/2010
- Ludlum Model 14C, with Model 44-9 Detector, Serial No. 44052, Calibration Date: 11/05/2010 (LLD = 27 ncpm)