



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
2100 RENAISSANCE BLVD.  
KING OF PRUSSIA, PA 19406-2713

November 18, 2021

EA-21-114

Toby Scholl, EH&S Leader  
Union Carbide Corporation  
A Subsidiary of the Dow Chemical Company  
437 MacCorkle Avenue  
South Charleston, WV 25303

SUBJECT: UNION CARBIDE CORPORATION - NRC INSPECTION REPORT  
03038844/2021001

Dear Mr. Scholl:

On July 22, 2021, with continued in-office review through September 2, 2021, Juan Ayala of this office conducted a routine inspection of licensed activities of Union Carbide Corporation. The inspection was an examination of your licensed activities as they relate to radiation safety and to compliance with the Commission's rules and regulations and the conditions in your license. The inspection consisted of observations by the inspector, interviews with personnel, and a selective examination of representative records. The enclosed report presents the results of this inspection. The inspector discussed the preliminary inspection findings with Justin Ricks, Radiation Safety Officer (RSO) and Toby Scholl, EHS Team Leader, at the conclusion of the on-site portion of the inspection. A final exit briefing was conducted (telephonically) with Justin Ricks on October 20, 2021.

Based on the results of this inspection, four apparent violations (AVs) were identified, one of which is being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at <https://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>. The AV being considered for escalated enforcement action is related to a failure to maintain a qualified RSO on your NRC license. The AVs not being considered for escalated enforcement action involve: a failure to retain records of the radiation protection program, including physical inventories; a failure to perform a prospective evaluation demonstrating that unmonitored individuals are not likely to receive, in one year, a radiation dose in excess of 10% of the allowable limits in 10 CFR Part 20; and a failure to conduct periodic radiation surveys.

Since the NRC has not made a final determination in this matter, a Notice of Violation is not being issued at this time. Please be advised that the number and characterization of the AVs described in the enclosed inspection report may change as a result of further review. You will be advised by separate correspondence of the results of our deliberations on this matter.

Before the NRC makes its enforcement decision regarding the AVs, we request that you provide additional information about your corrective actions. Specifically, the NRC notes that Union Carbide Corporation restored compliance after approving a new RSO by submitting an amendment request to name the RSO on the license. However, the NRC requires information

about the actions Union Carbide Corporation has taken and planned to prevent reoccurrence of this violation in the future, should the named RSO vacate or leave the position. In addition, please provide for each of the AVs: (1) the reason for the AVs, or if contested, the basis for disputing the AVs; (2) the corrective steps that have been taken and the results achieved; and (3) the corrective steps that will be taken. You should be aware that the promptness and comprehensiveness of your actions will be considered in assessing any civil penalty for the apparent violation. 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

The written response should be sent to the NRC within 30 days of the date of this letter. Your response may reference or include previous docketed correspondence if the correspondence adequately addresses the required response. You should clearly mark the response as a "Response to Apparent Violations in NRC Inspection Report No. 03038844/2021001; EA-21-114," and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy mailed to Blake D. Welling, Director, DRSS, Region I, 2100 Renaissance Boulevard, Suite 100, King of Prussia, PA 19406-2713, within 30 days of the date of this letter. If an adequate response is not received within the time specified and an extension of time has not been granted by the NRC, the NRC will proceed with its enforcement decision or schedule a pre-decisional enforcement conference (PEC).

In lieu of providing this written response, you may request a PEC to meet the NRC and provide your views in person.

If you choose to request a PEC, the meeting should be held, within 30 days of the date of this letter. The conference will include an opportunity for you to provide your perspective on these matters and any other information that you believe the NRC should take into consideration before making an enforcement decision. The topics discussed during the PEC may include information to determine whether a violation occurred, information to determine the significance of a violation, information related to the identification of a violation, and information related to any corrective actions taken or planned. The PEC would be open for public observation, and the NRC would issue a press release to announce the conference time and date.

Please contact Chris Cahill at 610-337-5108 within **10 days** of the date of this letter to notify the NRC which of the above options you choose. If you do not contact the NRC within the time specified, and an extension of time has not been granted by the NRC, the NRC will proceed with its enforcement decision.

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 Agencywide Documents Access and Management System (ADAMS), accessible from the NRC 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.

T. Scholl

3

If you have any questions concerning this matter, please contact Juan Ayala of my staff at 610-337-6927.

Sincerely,

Blake Welling, Director  
Division of Radiological Safety and Security

Docket No. 03038844  
License No. 47-00260-03

Enclosures:

1. Inspection Report 03038844/2021001
2. NRC Information Notice 96-28

cc w Encl: Justin Ricks, RSO

UNION CARBIDE CORPORATION - NRC INSPECTION REPORT 03038844/2021001 DATED NOVEMBER 17, 2021

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U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

INSPECTION REPORT

Inspection No.: 03038844/2021001  
EA No. EA-21-114  
Docket No.: 03038844  
License No.: 47-00260-03  
Licensee: Union Carbide Corporation  
Field Office Location: South Charleston, WV  
Inspection Dates: July 22, 2021, with continued in-office review until  
September 2, 2021  
Inspection Exit Date(s): July 22, 2021, debrief  
October 20, 2021, final exit

Inspector: \_\_\_\_\_ Juan Ayala \_\_\_\_\_ 10/22/21 \_\_\_\_\_  
Juan Ayala  
Health Physicist  
Division of Radiological Safety and Security  
date

Approved By: \_\_\_\_\_ Chris Cahill \_\_\_\_\_ 10/29/21 \_\_\_\_\_  
Chris Cahill, Chief  
Commercial, Industrial, R&D, and  
Academic Branch  
Division of Radiological Safety and Security  
date

## **EXECUTIVE SUMMARY**

Union Carbide Corporation  
NRC Inspection Report No. 03038844/2021001

A routine, announced inspection was performed of the Union Carbide Corporation (UCC) radioactive materials program. The license authorizes possession and use of fixed gauging devices used for continuous level indication for controlling industrial processes. The inspection was conducted with regard to NRC radioactive materials License Number 47-00260-03 and in accordance with NRC inspection procedure 87124, "Fixed and Portable Gauge Programs." The inspection was conducted on July 22, 2021, with continued in-office review until September 2, 2021. The inspection focused on the performance of the licensee's program through interviews with licensee workers, independent measurements of radiation conditions at the licensee's facilities, and review of selected records. A debrief meeting was held on July 22, 2021, with a final exit meeting on October 20, 2021.

During the inspection, four apparent violations of NRC requirements were identified. The apparent violations involved 1) failure to maintain a qualified Radiation Safety Officer (RSO) on the NRC license, 2) failure to maintain records of physical inventories, 3) failure to provide a prospective evaluation showing that unmonitored individuals receive less than the limits in 10 CFR 20.1502, and 4) failure to perform periodic radiation surveys. The first of the previously listed apparent violations is being considered for escalated enforcement action in accordance with the NRC's Enforcement Policy.

## REPORT DETAILS

### 1. **Organization and Scope of the Program**

#### a. Inspection Scope

The inspector reviewed the organization and scope of the licensee's radioactive materials program. Information was gathered through direct observations, reviews of records, and interviews with licensee staff.

#### b. Observations and Findings

The licensee is a chemical processing facility utilizing two fixed gauges, each source containing 800 mCi of Cs-137. The fixed gauges provide continuous level indication for controlling industrial processes.

### 2. **Review of Licensed Activities**

#### a. Inspection Scope

The inspector performed an announced routine inspection utilizing NRC Inspection Procedure 87124, "Fixed and Portable Gauge Programs" to conduct the inspection. Information was gathered through interviews with cognizant personnel, direct observation of licensed activities, review of records, tours of the facilities, and through the performance of independent radiation surveys.

#### b. Direct Observations/Interviews

The inspector reviewed the use of the gauges and the environmental conditions in which the gauges were being used. The inspector interviewed the RSO and the control room manager to ascertain their level of knowledge of the gauges and radiation safety protocols.

#### Independent Radiation Measurements

The inspector performed independent radiation surveys at the facility. The radiological surveys were taken of the accessible areas around the gauges while they were in use and all results were within applicable regulatory limits.

Instrument type: Ludlum Model # 2401-P, SN: 344895  
calibration expiration date: April 12, 2022

#### Program Oversight

The RSO reported that the individual named as the RSO on the UCC license left the program in June 2017 and that there had been several individuals assigned to provide program oversight. The RSO stated that he had recently completed RSO training and needed to be added to the license. The inspector explained that the NRC requires

licensees to continuously maintain the services of a qualified RSO who has been approved by the NRC and listed on the NRC license.

The RSO maintains the radiation safety program and records. The inspector reviewed annual audits, authorized user training, leak test, shutter tests, and available physical inventory records. The licensee uses an industrial work planning software for scheduling routine maintenance activities, including shutter checks, leak testing, physical inventories, annual audits and yearly authorized user refresher training. While these activities are documented as being conducted, not all records were retrievable for review.

c. Conclusions

During this inspection, four apparent violation of NRC requirements were identified. One apparent violation is being considered for escalated enforcement action in accordance with the NRC's Enforcement Policy. The apparent violation being considered for escalated enforcement is as follows:

- A. Condition 12 of NRC License No 47-00260-03, Amendment 2, dated November 28, 2016, authorized a specific individual to fulfill the duties and responsibilities of the Radiation Safety Officer (RSO) for the license.

Contrary to the above, from June 2017 to July 22, 2021, the individual specifically authorized as the Radiation Safety Officer in Condition 12 of NRC License No. 47-00260-03, Amendment 2, dated November 28, 2016, did not fulfill the duties and responsibilities of a Radiation Safety Officer. Specifically, the Radiation Safety Officer left the employment of the licensee in June 2017. Union Carbide Corporation appointed new Radiation Safety Officers in 2017, 2020, and 2021 but did not submit a license amendment request until July 22, 2021, and the new RSO was not approved until August 30, 2021.

The following apparent violations are not being considered for escalated enforcement action:

- B. License Condition 15 of NRC License 47-00260-03, Amendment 2, dated November 28, 2016, requires, in part, that records of inventories be maintained for 3 years from the date of each inventory.

Contrary to the above, from January 2018 through December 2020, the licensee failed to maintain records of physical inventories to account for all sources and/or devices received and possessed under the license. Specifically, while the licensee stated that inventories were conducted every six months, the licensee maintained a "living file" that, when updated, overwrote any previous data. As a result, any records of past inventories were subsequently erased and not available for inspection.

- C. License Condition 23 of NRC License 47-00260-03, Amendment 2, dated November 28, 2016, requires, in part, that the licensee perform a prospective evaluation demonstrating that unmonitored individuals are not likely to receive, in one year, a radiation dose in excess of 10% of the allowable limits in 10 CFR Part 20.

Contrary to the above, the licensee failed to provide a prospective evaluation showing that unmonitored individuals receive less than the limits in 10 CFR 20.1502. Specifically, the licensee did not monitor authorized users and was not able to provide an evaluation that unmonitored individuals would not receive 10 percent of regulatory limits.

- D. License Condition 23 of NRC License 47-00260-03, Amendment 2, dated November 28, 2016, requires, in part, that the licensee develop, implement, maintain, and distribute operating and emergency response procedures.

Contrary to the above, from 2018 to 2021, the licensee did not perform periodic radiation surveys as directed by their Sealed Source Radiation Safety Program. Specifically, the licensee's radiation safety program requires that periodic radiation surveys be performed every six months (not to exceed 7 months), and the licensee failed to perform radiation surveys every six months.

### **3. Exit Meeting**

On July 22, 2021, the inspector conducted an onsite inspection debrief meeting with the licensee. The apparent violations were discussed during the meeting and the licensee acknowledged the inspection findings. A subsequent exit meeting was conducted via telephone on October 20, 2021. The representative acknowledged the inspection findings.

## ATTACHMENT

### **PARTIAL LIST OF PERSONS CONTACTED**

\*#Justin Ricks, Radiation Safety Officer  
\*Toby Scholl, EHS Team Manager

\* Present at Entrance Meeting and Debrief  
# Present at Entrance and Exit Meetings

### **INSPECTION PROCEDURES USED**

IP 87124, Fixed and Portable Gauge Programs

### **LIST OF DOCUMENTS REVIEWED**

Annual audits 2018-2021  
Authorized user training records  
Leak test records 2018-2021  
Shutter tests record 2018-2021  
Source inventory records for 2021

### **LIST OF ACRONYMS USED**

ADR: Alternative Dispute Resolution  
ADAMS: Agency wide Documents Access and Management System  
AV: Apparent Violation  
CFR: Code of Federal Regulations  
EA: Enforcement Action  
ICR: Institute for Conflict Resolution  
PEC: Pre-decisional Enforcement Conference  
RSO: Radiation Safety Officer  
UCC: Union Carbide Corporation