



DEPARTMENT OF LABOR

Occupational Safety and Health Administration

[Docket No. OSHA-2022-0010]

KBR Wyle Services, LLC; Grant of Permanent Variance

AGENCY: Occupational Safety and Health Administration (OSHA), Labor.

ACTION: Notice.

SUMMARY: In this notice, OSHA grants a permanent variance to KBR Wyle Services, LLC (KBR) from a provision of the OSHA standard that regulates commercial diving operations.

DATES: The permanent variance specified by this notice becomes effective on [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER] and shall remain in effect until it is modified or revoked, whichever occurs first.

FOR FURTHER INFORMATION CONTACT: Information regarding this notice is available from the following sources:

Press inquiries: Contact Mr. Frank Meilinger, Director, OSHA Office of Communications, U.S. Department of Labor, telephone: (202) 693-1999; email: meilinger.francis2@dol.gov.

General and technical information: Contact Mr. Kevin Robinson, Director, Office of Technical Programs and Coordination Activities, Directorate of Technical Support and Emergency Management, Occupational Safety and Health Administration, U.S. Department of Labor, phone: (202) 693-1911 or email: robinson.kevin@dol.gov.

SUPPLEMENTARY INFORMATION:

Copies of this Federal Register notice: Electronic copies of this *Federal Register* notice are available at <http://www.regulations.gov>. This *Federal Register* notice, as well

as news releases and other relevant information are also available at OSHA's webpage at <http://www.osha.gov>.

I. Overview

OSHA's standards in subpart T of 29 CFR 1910 govern commercial diving operations. On June 20, 2022, KBR Wyle Services, LLC (KBR or the applicant), submitted an application for a permanent variance under Section 6(d) of the Occupational Safety and Health Act of 1970 (OSH Act; 29 U.S.C. 655) and 29 CFR 1905.11 (Variances and other relief under section 6(d)), from a provision of OSHA's commercial diving operations (CDO) standard that regulates the use of decompression chambers (Docket No. OSHA-2022-0010-0002). KBR's application also requested an interim order pending OSHA's decision on the variance application. KBR's corporate offices are located at 601 Jefferson Street, Houston, Texas, 77002, and KBR identified an additional place of employment involved in the variance application: NASA's Neutral Buoyancy Laboratory, 13000 Space Center Boulevard, Houston, Texas, 77059.

This notice addresses KBR's application for a permanent variance and interim order from the provision of OSHA's CDO standard at 29 CFR 1910.423(b)(2) that requires the employer to instruct divers engaged in commercial diving operations to remain awake and in the vicinity of the decompression chamber at the dive location for at least one hour after the dive (including decompression or treatment as appropriate) for any dive outside the no-decompression limits, deeper than 100 feet of sea water (fsw), or using mixed gas as a breathing mixture.

OSHA reviewed KBR's application for the variance and interim order based on the alternate standard OSHA granted NASA on June 30, 2021, and determined that KBR appropriately submitted in compliance with the applicable variance procedures in Section 6(d) of the Occupational Safety and Health Act of 1970 (OSH Act, 29 U.S.C. 655(d)) and OSHA's regulations at 29 CFR 1905.11 (Variances and other relief under section 6(d)),

including the requirement that the applicant inform workers and their representatives of their rights to petition the Assistant Secretary of Labor for Occupational Safety and Health for a hearing on the variance application.

OSHA additionally reviewed the alternative procedures in KBR's application, along with the alternate standard granted to NASA on June 30, 2021, and preliminarily determined that KBR's proposed alternative, subject to the conditions in the request and imposed by the interim order, provides measures that are as safe and healthful as those required by the cited OSHA standard. On November 20, 2023, OSHA published a *Federal Register* notice announcing KBR's application for a permanent variance, stating the preliminary determination along with the basis of that determination, and granting the interim order (88 FR 80771). OSHA requested comments on each.

OSHA did not receive any comments or other information disputing the preliminary determination that the alternative was at least as safe as OSHA's standard, nor any objections to OSHA granting a permanent variance. Accordingly, through this notice, OSHA grants KBR a permanent variance subject to the conditions set out in this document.

II. NASA's Alternate Diving Standard and KBR's Variance Application

A. Background on NASA Alternate Standard.

On December 15, 2020, NASA submitted an application (Docket No. OSHA-2022-0010-0001) to OSHA proposing one alternate standard to 29 CFR 1910.423(b)(2), Subpart T, and included with its application extensive supporting introductory, background, and explanatory information (Docket No. OSHA-2022-0010-0003). NASA sought an alternate standard that would permit the NBL to conduct post-dive health

monitoring tailored to NASA's specific dive operations and medical surveillance capabilities.

The alternate standard application stated that NASA operates training and simulation activities for space operations that routinely involve underwater diving operations in preparation of upcoming missions. NASA described the NBL as a large, indoor tank of water, where astronauts perform simulated extravehicular activities (EVAs), also known as spacewalks, in preparation for upcoming space missions. The NBL is a controlled environment with a maximum depth of 40 feet. Its primary purpose is to provide a large-scale underwater environment where NASA personnel can simulate a weightless environment by balancing the buoyancy of a suited subject submerged in the water. Astronaut trainees, suited in Extravehicular Mobility Units (EMUs) adapted for use in water, can then perform a variety of specialized activities on spacecraft and Space Station analogs in the water. The NBL uses nitrox (46% enriched air nitrox (EAN₄₆)) as the standard breathing gas for self-contained underwater breathing apparatus (SCUBA) while working in the tank.

NASA asserted in its request for the alternate standard that diving on nitrox in the NBL is safer and less likely to cause decompression sickness (DCS) than diving on compressed air due to the lower partial pressure of nitrogen in the gas mixture, giving a shallower equivalent air depth (EAD). The EAD formula can accurately estimate the depth allowing for DCS risk calculation based on equivalent nitrogen pressures and dive durations used in air diving. In other words, breathing EAN₄₆ at 40 feet is like breathing air at 17 feet, essentially eliminating the risk of DCS in nominal operations.

Additionally, the alternate standard application examined the use of nitrox in the water, and the risk of oxygen toxicity, specifically the risk of seizure resulting from central nervous system (CNS) oxygen toxicity. NASA asserted in the alternate standard application that with the hard floor at 40 feet in the tank, there are no cases in medical or

diving literature of seizure in water at pressures of PO_2 of 1.0 ata. Further, NASA asserted that there have been no instances of CNS oxygen toxicity with NBL operations to date.

The alternate standard application asserted that the proposed alternate standard provides equivalent protection to the OSHA standard. First, NASA stated that the fixed diving depth of the pool has eliminated the risk of decompression sickness. As a result, the need to remain in the vicinity of the chamber is for the control and treatment of arterial gas embolism only. Second, NASA asserted that a shorter observation period would be sufficient: “At the NBL, a ten-minute observation provides the equivalent protection as a one-hour observation in the outside environment. Moreover, implementation of this standard will provide greater protection for divers by allowing them to dive on Nitrox rather than air routinely. This will reduce recurrent decompression stress experienced by the divers, along with the resulting long-term health problems that occur from repetitive decompression stress, such as the risk of dysbaric osteonecrosis (bone death).” Additionally: “NBL divers operate under no-decompression limits that are more conservative than the U.S. Navy. The OSHA regulations for mixed gas diving enhance safety when applied to gas mixtures used on long, deep, complex dives because of increased risk of DCS and oxygen toxicity. However, diving with nitrox at shallower depths, such as the NBL, is in fact safer than diving on air.” Further: “The NBL adheres to strict oxygen clean handling and compatibility requirements that exceed the industry standard for concentrations greater than 40% by volume. The alternate standard allows divers to breathe a safer gas during all NBL events, in addition to allowing for fewer total diving events.”

NASA’s alternate standard application also explained that NASA employees working within the NBL work together to ensure the availability of qualified personnel and certified systems to meet NASA’s EVA requirements. NASA stated that safety and

utility divers support suited trainees at all times in the water. Suited crew use surface-supplied nitrox via an umbilical, and support divers breath nitrox via self-contained underwater breathing apparatus (SCUBA) while working in the tank. NBL activities routinely involve dozens of trainees and divers, requiring hundreds of dive hours per week. NASA asserted in the alternate standard application that the NBL medical officer or a human test support group medical technician physically examines all divers for fitness prior to entering the water. Only the medical officer performs fitness to dive exams for suited subjects. These exams include obtaining vital signs and information on any changes to medical history, including but not limited to, medications; physical fitness; and cardiopulmonary and ear, nose, and throat examinations. Divers and suited subjects may be disqualified pending treatment or further evaluation and management if there are any concerning abnormalities. NASA also certified that it will apply and use the alternate standard only at the NBL and that NASA will not apply or use the alternate standard at any other location or during the other underwater activities NASA performs.

After fully considering NASA's application and its responses to OSHA's follow-up questions (Docket No. OSHA-2022-0010-0004), OSHA approved the alternate standard that NASA proposed for use solely at NASA's NBL (Docket No. OSHA-2022-0010-0002). KBR now seeks a permanent variance covering its employees conducting commercial diving operations at the NBL based on NASA's approved alternate standard.

B. KBR Variance Application

The information that follows about KBR comes from the KBR variance application. KBR is a contractor for NASA, a federal government agency that is responsible for science and technology related to air and space. On June 30, 2021, OSHA granted an alternate standard¹ for NASA regulating its use of decompression chambers during

¹ Federal agency heads may seek and obtain approval for alternate standards from OSHA pursuant to the procedures described in 29 CFR 1960.17. According to 29 CFR 1960.17(b), the Secretary will not approve

diving operations at NASA's National Buoyancy Laboratory (NBL) (Docket No. OSHA-2022-0010-0002), OSHA's Comments and Decisions to NASA's Request for an Alternate Standard on Diving (NASA Alternate Diving Standard). To account for technological advances in the use of elevated oxygen levels in nitrox breathing-gas mixtures and the use of the equivalent-air-depth (EAD) formula (see OSHA's 2004 Final Rule amending 29 CFR Part 1910, Subpart T, Appendix C (69 FR 7351, 7356)), the NASA alternate standard provides NASA with modified requirements regarding the use of decompression chambers, including requiring the diver to remain awake and in the vicinity of the decompression chamber at the dive location for at least 10 minutes after the dive.

KBR's divers conduct diving operations for NASA at the NBL facility in Houston, Texas. NASA requires all divers to follow all their internal requirements, including the NBL Diving Program and the NASA alternate standard, which can only cover NASA employees. To permit KBR's divers to dive under the same standards as their NASA-employed colleagues, KBR seeks a permanent variance from 29 CFR 1910.423(b)(2) based on the same conditions that apply to NASA divers under the NASA alternate standard.

KBR contends that the proposed variance conditions outlined in its application provide KBR's workers with a place of employment that is at least as safe and healthful as they would obtain under the provisions of OSHA's CDO standard. KBR also certified that it is not contesting any citations involving the standards that are the subject of this application. As a NASA contractor, KBR asserts that its divers must strictly follow the requirements of the NBL, which include following the conditions of the NASA alternate standard. However, the NASA alternate standard's coverage does not, and cannot,

an alternate standard, "unless it provides equivalent or greater protection for affected employees" as compliance with the OSHA standard.

include KBR-employed divers, or any private-sector employees, even though they work side-by-side with NASA-employed divers during NBL operations. KBR states that its divers undergo the same training as NASA NBL employees, and that there are no differences between NASA and KBR divers regarding medical clearance procedures and standards, training materials, equipment used, equipment maintenance, and diving procedures. Accordingly, KBR seeks permission from OSHA to conduct dive activities for NASA at the NBL under the same standard regulating the time required for NASA employees diving at the NBL, on nitrox and within the no-decompression limits, pursuant to the NASA alternate standard rather than the requirements of 29 CFR 1910.432(b)(2).

C. Variance from 29 CFR 1910.423(b)(2), Requirements for Decompression

Chambers.²

OSHA's standards regulating the availability and use of decompression chambers require that: for any dive within the no-decompression limits, deeper than 100 fsw, or using mixed gas as a breathing mixture, the employer must instruct the diver to remain awake and in the vicinity of the decompression chamber that is at the dive location for at least one hour after the dive (including decompression or treatment as appropriate) (1910.423(b)(2)).

In adopting the conditions of the NASA alternate standard, KBR's application proposes deviating from the decompression chamber availability and capability requirements in OSHA's CDO standard. As OSHA explained when it granted the NASA Alternate Diving Standard, the purpose of having a decompression chamber available and ready for use at a dive site is to treat DCS and arterial gas embolism (AGE). DCS may occur from breathing air or mixed gases at diving depths and durations that require

² A decompression chamber is "a pressure vessel for human occupancy such as a surface decompression chamber, closed bell, or deep diving system used to decompress divers and to treat decompression sickness" (29 CFR 1910.402).

decompression, while AGE may result from over-pressurizing the lungs, usually following a rapid ascent to the surface without proper exhalation. If DCS or AGE develops, a decompression chamber, oxygen or treatment gas mixtures, and treatment tables and instructions must be readily available to treat these conditions effectively. Decompression chambers provide the most effective therapy – recompression – for DCS and AGE.

KBR's proposed variance would adopt the conditions of the NASA Alternate Diving Standard that permit NASA to deviate from the requirement of 1910.423(b)(2) that the employer instruct all divers who dive deeper than 100 fsw or who dive using mixed breathing gas to remain awake and in the vicinity of a decompression chamber for one hour after the dive. The NASA alternate standard allows divers at NASA's NBL who are diving on nitrox, within the no-decompression limits, to be instructed to remain awake and in the vicinity of the decompression chamber at the dive location for at least 10 minutes after the dive. In other words, the NASA alternate Section 1910.423(b)(2) requires that any NASA diver at NASA's NBL who dives using nitrox within the no-decompression limits will be instructed to remain awake and in the vicinity of the decompression chamber for at least ten minutes after the completion of the dive.

When granting NASA's request for an alternate standard to 29 CFR 1910.423(b)(2), OSHA explained that the CDO standard sets the 100 fsw limit based on the increased risk of developing DCS and AGE on dives deeper than 100 fsw. However, OSHA explained that the agency amended the CDO standard in 2004 to permit employers of recreational diving instructors and diving guides to comply with an alternative set of decompression chamber requirements (see 69 FR 7351 (February 17, 2004)).³ Under the conditions

³ Appendix C incorporated into the CDO standard essentially the same terms as those used in a variance that OSHA granted to Dixie Divers, Inc., a diving school that employed several recreational diving instructors, in 1999 (see 64 FR 71242, December 20, 1999).

articulated in Appendix C to Subpart T, OSHA does not require eligible employers to provide a decompression chamber at the dive site when engaged in SCUBA diving to 130 fsw while breathing a nitrox gas mixture within the no-decompression limits.

OSHA explained in the NASA Alternate Diving Standard that it created this exemption for diving guides because the agency determined that the elevated levels of oxygen in nitrox breathing-gas mixtures reduced the incidence of DCS compared to breathing air at the same depths, and therefore found that the risk of DCS was minimal.

After considering the statistics and information regarding NBL operations that NASA submitted, OSHA concluded that NASA's proposed alternate standard would provide equivalent protection to the CDO standard when NBL divers use nitrox breathing-gas mixtures. KBR's proposed variance would adopt conditions identical to those for which OSHA approved NASA's alternate standard to 29 CFR 1910.423(b)(2).

D. Technical Review

OSHA conducted a review of KBR's variance application and the supporting technical documentation. After completing the review of the variance application, the NASA alternate standard, and related supporting materials, OSHA concludes that:

1. The proposed conditions would provide KBR's divers with protection equivalent to the CDO standard;
2. There are no differences in the training requirements, medical clearance procedures and standards, equipment use and maintenance requirements, or diving procedures that apply to NASA-employed and KBR-employed divers who dive at the NBL; and
3. Diving safety for the NBL will be maximized when the diving practices of KBR-employed divers are identical to those of NASA-employed divers.

III. Decision

After reviewing the proposed alternative, OSHA has determined that KBR proposed to implement effective alternative means of protection that will protect its employees as effectively as the requirements of paragraph 29 CFR 1910.423(b)(2) of the CDO standard. Further, under section 6(d) of the OSH Act (29 U.S.C. 655(d)), and based on the record discussed above, OSHA finds that when the employer complies with the conditions of the variance, the working conditions of the employer's workers are at least as safe and healthful as if the employer complied with the working conditions specified by paragraph 29 CFR 1910.423(b)(2) of OSHA's CDO standard. Therefore, under the terms of this variance, KBR must: (1) comply with the conditions listed below under section V of this notice (Order) for the period between the effective date of this notice and until the agency modifies or revokes this final order in accordance with 29 CFR 1905.13; (2) comply fully with all other applicable provisions of 29 CFR part 1910; and (3) provide a copy of this *Federal Register* notice to all employees affected by the conditions using the same means it used to inform these employees of the application for a permanent variance.

IV. Description of the Conditions Specified by the Permanent Variance

The conditions for the variance are set out in the Order at the end of this document. This section provides additional detail regarding the conditions in the permanent variance that OSHA is granting to KBR.

Condition A: Scope.

The scope of the permanent variance limits coverage only to the commercial diving operations performed at NASA's NBL. Clearly defining the scope of the permanent variance provides KBR, KBR's employees, potential future applicants, other stakeholders, the public, and OSHA with necessary information regarding the work

situations to which the permanent variance applies. To the extent that KBR exceeds the defined scope of this variance, it must comply with OSHA's standards.

OSHA's grant of a permanent variance applies only to KBR, and only to work performed at NASA's Neutral Buoyancy Laboratory. The permanent variance does not apply to any other employers or any other worksite. Additionally, coverage is limited to the work situations specified under the "Scope and Application" section of Subpart T, Commercial Diving Operations (1910.401(a)), and does not apply to commercial diving operations that are already exempted under 1910.401(a)(2).⁴ When implementing the conditions of the permanent variance, KBR must comply fully with all safety and health provisions that are applicable to commercial diving operations as 29 CFR 1910, Subpart T specifies, except for the requirements described in 29 CFR 1910.423(b)(2). The permanent variance only applies to KBR's employees when they conduct diving operations at NASA's Neutral Buoyancy Laboratory.

Condition B: List of Abbreviations.

Condition B defines abbreviations used in the permanent variance. OSHA believes that defining these abbreviations serves to clarify and standardize their usage, thereby enhancing the applicant's and its employees' understanding of the conditions specified by the permanent variance.

Condition C: Requirements for Decompression Chambers.

This condition requires that, for any dive within the no-decompression limits and using nitrox as a breathing mixture, KBR will instruct the diver to remain awake and in

⁴ Section 1910.401(a)(2) provides that the CDO standard does not apply to any dive (i) performed solely for instructional purposes, using open-circuit, compressed-air SCUBA and conducted within the no-decompression limits; (ii) performed solely for search, rescue, or related public safety purposes by or under the control of a governmental agency; (iii) governed by 45 CFR Part 46 (Protection of Human Subjects, U.S. Department of Health and Human Services) or equivalent rules or regulations established by another federal agency, which regulate research, development, or related purposes involving human subjects; or (iv) fitting the standard's definition of "scientific diving."

the vicinity of the decompression chamber which is at the dive location for at least ten minutes after the dive (including decompression or treatment as appropriate). When using a nitrox breathing-gas mixture, KBR will be required to meet the no-decompression provisions of Appendix C to the CDO standard (Use of No-Decompression Limits).

Condition D: Communication.

This condition requires the applicant to implement an effective system of information sharing and communication. Effective information sharing and communication are intended to ensure that affected workers receive updated information regarding any safety-related hazards and incidents, and corrective actions taken, prior to the start of each shift. This condition also requires the applicants to ensure that reliable means of emergency communications are available and maintained for affected workers and support personnel during diving activities. Availability of such reliable means of communications enables affected workers and support personnel to respond quickly and effectively to hazardous conditions or emergencies that may develop during diving activities at NASA's NBL.

Proposed Condition E: Worker Qualification and Training.

This condition requires KBR to follow the requirements of the NASA NBL Safety Program, including the NBL Safe Practices Manual, and any instruction provided by NASA's Dive Safety Board (DSB) to qualify their employees to perform diving activities at the NBL. Further, KBR must ensure that the NBL medical officer of the day or a human test support group medical technician physically examines all employees conducting dives at the NBL for fitness to dive prior to entering the water. This condition specifies actions an affected worker must be able to perform safely during diving activities, including how to enter, work in, and exit from hyperbaric conditions under both normal and emergency conditions. Having well-trained and qualified workers performing the required dive tasks ensures that they recognize and respond appropriately

to underwater safety and health hazards. These qualification and training requirements enable KBR divers to cope effectively with emergencies, as well as the discomfort and physiological effects of hyperbaric exposure, thereby preventing worker injury, illness, and fatalities.

Proposed Condition F: Recordkeeping.

Under OSHA's existing recordkeeping requirements in 29 CFR part 1904 regarding Recording and Reporting Occupational Injuries and Illnesses, KBR must maintain a record of any recordable injury, illness, or fatality (as defined by 29 CFR part 1904) resulting from exposure of an employee to hyperbaric conditions, or any other work conditions, by completing the OSHA Form 301, Injury and Illness Incident Report, and OSHA Form 300, Log of Work-Related Injuries and Illnesses. KBR did not seek a variance from this standard and therefore must comply fully with those requirements.

Proposed Condition G: Notifications.

Under this condition, the applicant must, within specified periods of time: (1) notify OSHA of any recordable injury, illness, in-patient hospitalization, amputation, loss of an eye, or fatality that occurs as a result of diving operations within eight (8) hours of the incident; (2) provide OSHA's Office of Technical Programs and Coordination Activities (OTPCA) and the Houston South Texas OSHA Area Office within twenty-four (24) hours of the incident with a copy of the incident investigation report (using OSHA Form 301, Injury and Illness Incident Report) of these events; (3) include on OSHA Form 301, Injury and Illness Incident Report, information on the diving conditions associated with the recordable injury or illness, the root-cause determination, and preventive and corrective actions identified and implemented; (4) provide the certification that affected workers were informed of the incident and the results of the incident investigation; (5) notify OTPCA and the Houston South Texas OSHA Area Office at least 15 working days in advance should the applicant need to revise their dive procedures to accommodate

changes in their diving operations that affect their ability to comply with the conditions of the permanent variance; (6) obtain OSHA's written approval prior to implementing the revision in their dive procedures to accommodate changes in their diving operations that affect their ability to comply with the conditions in the permanent variance; and (7) provide OTPCA and the Houston South Texas OSHA Area Office, by January 31 of each calendar year, with a report summarizing the dives completed during the previous calendar year and evaluating the effectiveness of the variance conditions in providing a safe and healthful work environment and in preventing dive-related incidents.

OSHA notes that the requirement for completing and submitting the hyperbaric exposure-related (recordable) incident investigation report (OSHA Form 301, Injury and Illness Incident Report) is more restrictive than the current recordkeeping requirement of completing the form within seven (7) calendar days of the incident (1904.29(b)(3)). However, OSHA has restricted this modified, more stringent incident investigation and reporting requirement to intervention-related (recordable) incidents only. Providing rapid notification to OSHA is essential because time is a critical element in OSHA's ability to determine the continued effectiveness of the variance conditions in preventing injuries and illnesses, and KBR's identification and implementation of appropriate corrective and preventive actions.

Further, these notification requirements also enable the applicant, its employees, and OSHA to assess the effectiveness of the permanent variance in providing the requisite level of safety to the KBR's workers and, based on this assessment, whether to revise or revoke the conditions of the permanent variance. Timely notification permits OSHA to take whatever action may be necessary and appropriate to prevent possible further injuries and illnesses. Providing notification to employees informs them of the precautions KBR has taken to prevent similar incidents in the future.

Additionally, this condition requires the applicant to notify OSHA if it ceases to do business, has a new address or location for the main office, or transfers the operations the permanent variance covers to a successor company. In addition, the condition specifies that OSHA must approve the potential transfer of the permanent variance to a successor company. These requirements allow OSHA to communicate effectively with the applicant regarding the status of the permanent variance and expedite the agency's administration and enforcement of the permanent variance. Stipulating that an applicant is required to have OSHA's approval to transfer a variance to a successor company provides assurance that the successor company has knowledge of, and will comply with, the conditions specified by this permanent variance, thereby ensuring the safety of workers involved in performing the operations covered by the permanent variance.

V. Order

As of the effective date of this final order, OSHA is revoking the interim order granted to the employer on November 20, 2023 (88 FR 80771).

OSHA issues this final order authorizing KBR Wyle Services LLC (KBR or the applicant) to comply with the following condition instead of complying with the requirements of paragraphs 29 CFR 1910.423(b)(2) of OSHA's commercial diving standard. This final order applies to all KBR employees located at 13000 Space Center Boulevard, Houston, Texas 77059.

A. Scope.

The permanent variance applies only to KBR's diving operations conducted for NASA and performed at NASA's NBL; and

Performed in compliance with all applicable conditions of Subpart T of 29 CFR 1910 except for the requirement specified by 29 CFR 1910.423(b)(2) when conducting commercial diving operations.

B. List of Abbreviations.

The following abbreviations apply to this permanent variance:

ATA – Atmosphere Absolute

BCD – Buoyancy Compensator Device

CDO – Commercial Diving Operations

CFR – Code of Federal Regulations

DCS – Decompression Sickness

DSB – Dive Safety Board

EAD – Equivalent Air Depth

EAN_x – Enriched Air Nitrox (where X denotes percentage of oxygen)

EVA – Extravehicular Activities

fsw – feet of seawater

KBR – KBR Wyle Services, LLC

NBL – NASA Neutral Buoyancy Laboratory

OSHA – Occupational Safety and Health Administration

OTPCA – OSHA’s Office of Technical Programs and Coordination Activities

PO₂ – Partial Pressure of Oxygen in ATA

SCUBA – Self-Contained Underwater Breathing Apparatus

C. Requirements for Decompression Chambers.

For any dive at the NBL that is within the no-decompression limits and using nitrox as a breathing mixture, KBR must instruct the diver to remain awake and in the vicinity of the decompression chamber at the dive location for at least ten (10) minutes after the dive (including decompression or treatment as appropriate).

D. Communication.

This condition requires the applicant to implement an effective system of information sharing and communication. Effective information sharing and communication are intended to ensure that affected workers receive updated information

regarding any safety-related hazards and incidents, and corrective actions taken, prior to the start of each shift. This condition also requires the applicant to ensure that reliable means of emergency communications are available and maintained for affected workers and support personnel during diving activities. Availability of such reliable means of communications enables affected workers and support personnel to respond quickly and effectively to hazardous conditions or emergencies that may develop during diving activities at NASA's NBL.

E. Worker Qualification and Training.

This permanent variance requires KBR to:

1. Follow the requirements of the NASA NBL Safety Program, including the NBL Safe Practices Manual, as well as any instruction provided by NASA's DSB;
2. Ensure that prior to entering the water, the NBL medical officer of the day or a human test support group medical technician physically examines all KBR employees conducting dives at the NBL for fitness to dive.

F. Recordkeeping.

In addition to completing OSHA Form 301, Injury and Illness Incident Report, and OSHA Form 300, Log of Work-Related Injuries and Illnesses, KBR must maintain records of recordable injuries that occur as a result of diving operations conducted for NASA under the NBL. Information gathered and recorded under this provision, in concert with the information provided under condition G (using OSHA Form 301, Injury and Illness Incident Report) to investigate and record dive-related recordable injuries as 29 CFR 1904.4, 1904.7, 1904.8 through 1904.12 define, will enable KBR and OSHA to determine the effectiveness of the permanent variance in preventing DCS and other dive-related injuries and illnesses.

G. Notifications.

1. To assist OSHA in administering the conditions specified herein, KBR must:

- a. Notify OTPCA and the Houston South Texas OSHA Area Office at www.osha.gov/contactus/byoffice of any recordable injury illness or fatality (by submitting the completed OSHA Form 301, Injury and Illness Incident Report)⁵ that occurs as a result of diving operations, or meets the recordable injury or illness criteria of 29 CFR 1904. The notification must be made within eight (8) hours of the incident or 8 hours after becoming aware of a recordable injury, illness, or fatality; KBR must submit a copy of the incident investigation (OSHA Form 301, Injury and Illness Incident Report) to OSHA within 24 hours of the incident or 24 hours after becoming aware of a recordable injury, illness, or fatality. In addition to the information that the OSHA Form 301, Injury and Illness Incident Report, requires, the incident-investigation report must include a root-cause determination, and the preventive and corrective actions identified and implemented.
- b. Provide OTPCA and the Houston South Texas OSHA Area Office within twenty-four (24) hours of the incident with a copy of the incident investigation report (using OSHA Form 301, Injury and Illness Incident Report);
- c. Provide certification to OTPCA and the Houston South Texas OSHA Area Office within 15 working days of the incident that KBR informed affected workers of the incident and the results of the incident investigation (including the root-cause determination and preventive and corrective actions identified and implemented).
- d. Include on the OSHA Form 301, Injury and Illness Incident Report, information on the diving conditions associated with the recordable injury or

⁵ See 29 CFR 1904 (Recording and Reporting Occupational Injuries and Illnesses) (http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9631); recordkeeping forms and instructions <https://www.osha.gov/recordkeeping/forms>.

illness, the root-cause determination, and preventive and corrective actions identified and implemented;

- e. Provide their certification that they informed affected divers of the incident and the results of the incident investigation;
- f. Notify OTPCA and the Houston South Texas OSHA Area Office within fifteen (15) working days should the KBR need to revise their dive procedures to accommodate changes in their diving operations that affect their ability to comply with the conditions of the permanent variance;
- g. Obtain OSHA's written approval prior to implementing the revision in their dive procedures to accommodate changes in their diving operations that affect KBR's ability to comply with the conditions in the permanent variance;
- h. By the fifteenth (15th) of January, at the beginning of each new calendar year, provide OTPCA and Houston South Texas OSHA Area Office with a report summarizing the dives completed during the previous year and evaluating the effectiveness of the variance conditions in providing a safe and healthful work environment and in preventing dive-related incidents;
- i. Notify the OTPCA and the Houston South OSHA Area Office as soon as possible, but no later than seven (7) days, after KBR has knowledge that it will:
 - a. Cease doing business;
 - b. Change the location and address of the main office for managing the diving operations specified herein; or
 - c. Transfer the operations specified herein to a successor company.
- j. Notify all affected employees of this permanent variance by the same means required to inform them of its application for a permanent variance.

2. This permanent variance cannot be transferred to another company.

OSHA hereby grants a permanent variance to KBR, subject to the conditions outlined above.

VII. Authority and Signature

David L. Keeling, Assistant Secretary of Labor for Occupational Safety and Health, 200 Constitution Avenue, NW, Washington, DC 20210, authorized the preparation of this notice. Accordingly, the agency is issuing this notice pursuant to 29 U.S.C. 655(d), Secretary of Labor's Order No. 7-2025 (90 FR 27878, June 30, 2025), and 29 CFR 1905.11.

Signed at Washington, DC, on July 29, 2026.

David L. Keeling,

Assistant Secretary of Labor for Occupational Safety and Health.

[FR Doc. 2026-17138 Filed: 8/20/2026 8:45 am; Publication Date: 8/21/2026]