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GOVERNOR OF HAWAII

ELIZABETH A. CHAR, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:

July 22, 2022

Rear Admiral Stephen Barnett
Commander, Navy Region Hawaii
850 Ticonderoga Street, Suite 110
Joint Base Pearl Harbor Hickam, Hawaii 96860-5101
[via email only: stephen.d.barnett.mil@us.navy.mil]

Dear RDML Barnett:

SUBJECT: Defueling Plan
Red Hill Bulk Fuel Storage Facility

The Hawaii State Department of Health (DOH) reviewed the Red Hill Bulk Storage Facility, Oahu, Hawaii Defueling Plan (Plan), submitted by the Department of Defense (DOD) on June 30, 2022, to satisfy the requirements of the DOH's May 6, 2022 Emergency Order (EO).

The DOH is disapproving the submitted Plan in whole. We confirm the DOD's understanding that it will not receive the DOH approval of the Defueling Plan until it is able to provide an updated Plan to the satisfaction of the DOH as specified in the EO, and at a minimum, incorporate supplemental information described throughout the Plan.

The DOD's submission lacks the requisite detail and specificity necessary for the DOH to fully evaluate how the Navy will execute safe and expeditious defueling. In addition to noting the Plan's indefinite schedule of work, we offer additional observations and concerns in the enclosed document. We understand that due to the fact that there are contingencies that need to be more fully understood and which are being examined pursuant to work being performed under current contracts, the DOD intends to supplement the Plan by August 31, 2022, with submission to the DOH by September 2022. The DOH expects the DOD to address our attached comments in the supplement.

We look forward to receiving responses to these comments by September 7, 2022.

Should you have any questions regarding this letter, please contact Ms. Lene Ichinotsubo of the Solid and Hazardous Waste Branch at (808) 586-4226.

Sincerely,

Kathleen Ho

KATHLEEN S. HO
Deputy Director for Environmental Health

Enclosure

c: CAPT Cameron Geertsema, NAVFAC Hawaii (w/encl.) [via email only]
Mr. Donald Panthen, NAVFAC Hawaii (w/encl.) [via email only]
Ms. Gabriela Carvalho, U.S. EPA (w/encl.) [via email only]
Mr. Wayne Praskins, U.S. EPA (w/encl.) [via email only]

Enclosure
July 22, 2022 Letter to Rear Admiral Stephen Barnett

Hawaii Department of Health Review
Red Hill Bulk Fuel Storage Facility, Oahu, Hawaii Defueling Plan,
Department of Defense, June 30, 2022

On June 30, 2022, the Department of Health (DOH) received the *Red Hill Bulk Fuel Storage Facility, Oahu, Hawaii, Defueling Plan* (Defueling Plan or Plan), dated June 30, 2022. As the Department of Defense (DOD) noted throughout the Defueling Plan, the Plan is incomplete and does not contain the required minimum information specified in Item 4 of the Emergency Order (EO) issued by the DOH on May 6, 2022. We also note that the proposed unpacking procedures that the DOD identified as needing to be conducted so that repairs to the pipelines may be performed, are still being developed and have not been submitted. Therefore, in accordance with Item 5 of the EO, the DOH must disapprove the Defueling Plan, dated June 30, 2022.

GENERAL COMMENTS

1. **General Comment (Table 1, Pages 6-9):** In Paragraph 4 of Section II, Order, of the EO, DOH identified a minimum of seven (7) elements to be included in the Plan. The DOD Plan indicated that all the elements were either "partially complete" or "ongoing." We understand that much of the additional information and details such as defueling procedures, infrastructure repair design, and schedule will be completed on August 31, 2022, with the submission of the detailed Plan in September 2022. Address the following listed comments and include components related to the described unpacking process and Aqueous Film Forming Foam (AFFF) drain line repair. We look forward to receipt of the detailed Plan.

2. **Schedule Time for DOH Review**: The Plan specified that additional studies are being completed and additional information is forthcoming, thus the information required in the EO will be provided in phases. Phase 2, *Identify Actions Required to Enable Defueling*, is expected to be completed on August 31, 2022, with the Navy planning to submit the detailed Plan to DOH in September 2022. Yet, Phase 3 is expected to commence in September 2022. The DOD's schedule does not incorporate time for DOH review. Time for DOH review is required to be included as part of the revised overall detailed critical path management (CPM) project schedule.

3. **AFFF Drain Line:** We understand that the Navy is currently evaluating alternative designs for the repair of the AFFF drain line that was damaged on November 20, 2021. This discussion is not included in the Plan and should be included. This repair is critical to the emergency and release response actions and may impact the overall construction schedule. The final chosen alternative, basis for selection, design, schedule, and operation plans shall be provided as part of the Plan.

SPECIFIC COMMENTS

4. **Page 1, Paragraph 2 and Overall Project Schedule:** The Plan indicates that defueling will be completed within eight (8) months ("four to eight months" per page 17 of the Plan). Recent meetings indicated evaluations are ongoing and there have been

changes since the Defueling Plan was written. Is four (4) to eight (8) months still the estimated time period to defuel once it is initiated? The detailed CPM schedule should identify dates for the duration and time frame for each project task.

5. **Page 1, Paragraph 3:** Current estimates for completion of defueling is by the end of calendar year 2024. This is two and a half (2.5) years from now and initial estimates were two (2) years to complete (in the Simpson Gumpertz & Heger Inc. Report (SGH Report) and previous presentations). The Plan states that installing the bypass system is complex and due to the custom fittings required, there will be significant lead times, and this will drive the schedule. Based on this, it appears that the bypass lines are the main reason the project has been extended from two (2) to two and a half (2.5) years. Given that the bypass (pressure equalization) lines are additional protection (in addition to the modified operating procedures to prevent surge and structural supports to prevent damage in the event of a surge), explain why the Navy believes that this additional time for installing the bypass lines is warranted.

   The SGH Report analysis didn't cover the frequency of surge events that occur during fuel movement "evolutions" in the Red Hill Bulk Fuel Storage Facility. DOH is requesting the following information:

   a. Total number of surge events that occurred in 2021,
   b. Total number of fuel evolutions that occurred in 2021, and
   c. If data exists, also provide the number of surge events that occurred in the last five years verses total number of fuel evolutions in the last five years.

6. **Page 2 Unpacking:**
   a. Page 2 states, "*All three product pipeline systems contain some fuel, and some of the infrastructure repairs (e.g., JP5 [sic] pipeline repairs, installation of Pressure Indicator Transducers (PITs), etc.) cannot commence until those lines are unpacked.*" However, Page 15 states, "*To enhance safety of the unpacking process, DLA is contracting for 14 additional Pressure Indicating Transmitter sensors. These sensors go into all three fuel lines to provide continuous reading of the pressure in the pipe, and would allow the operators to detect in real time and address any pressure anomalies during operations.*" Will the unpacking occur to allow for the pressure indicating transmitter sensors to be installed, or can they be installed safely with fuel in the system for the purpose of unpacking for other repairs? Provide information on the planned location of these 14 PIT sensors. Confirm that the Pressure Indicator Transducers are the same as the Pressure Indicating Transmitter sensors.

b. The Plan indicates that the DOD will seek DOH approval to commence unpacking and must demonstrate to DOH that the planned unpacking is safe. In order to adequately review the upcoming request to unpack, submit the following:

   i. Operational procedures including process flow diagrams/schematics;
   ii. Confirmation that there are adequate pipe system supports;
   iii. Controls and procedures currently in place to prevent incidences that may cause a release;
   iv. Existing spill prevention and response plans and procedures;
   v. Unpacking schedule; and
   vi. Confirmation that the skillet is still inserted in the JP-5 pipeline isolating the newly repaired portion of the JP-5 pipeline from the JP-5 pipeline that Navy plans to unpack.

c. During unpacking as well as during defueling, strict inventory of fuel volumes should be measured, reviewed, and documented.

7. **Page 3, Paragraph 1:**
   a. The Plan says, *"The bypass work in particular is complex because the contractor will have to install the bypass lines while fuel remains in the tanks and because of the constrained work location… Navy has experienced delays of up to 30 weeks for on-island orders for similar materials."* Provide information on the design, installation, and operation of the new system.
   b. Installation and operation of new bypass lines to the existing piping and tanks may add risk in addition to noted benefits. How will DOD assess the risk benefit of this bypass line? How will these bypass lines be tested prior to defueling?

8. **Page 3, Paragraph 1:** It appears that the DOD is planning on performing all the SGH recommendations. DOH understands that in some cases, the evaluation of what needs to be done is still being evaluated and that the actual recommendation for implementation may change based on current evaluations, such as the surge and associated stress analysis. Verify which is correct. When the recommended analyses are completed, provide the DOH with the summary of analysis and associated recommendation.

9. **Page 3, Paragraph 1, Last Sentence:** The DOD states that future updates to this Plan will contain more refined timelines. Provide a detailed CPM schedule (Gantt chart format), when adequate information is known, of the tasks to be performed with durations, dependencies, and dates showing both critical path and other tasks that can be updated and tracked against the baseline as the process progresses. The schedule should include procurement, training, and expected document review/approval by the DOH, as well as infrastructure repairs, to ensure that no tasks are missed and to assist

the regulatory agencies in allocating sufficient resources to ensure timely reviews and approvals and to help the Navy maintain the project schedule.

10. **Page 6, Table 1a:** When the DOD receives the FY2022 National Defense Authorization Act (NDAA) section 318 assessments, DOD Inspector General (IG) Audit report, and EPA inspection reports, submit unredacted copies to the DOH as soon as possible, and redacted versions of these documents as soon as practicable following the date on which the unredacted documents are submitted to the DOH, not later than 10 business days following the date on which the unredacted documents are submitted to the DOH. See 10 U.S.C. §130e; chapter 92F, HRS; chapter 2-71, HAR.

11. **Page 6, Table 1c –** On the CPM task schedule, identify what items are complete, a percent complete for ongoing tasks, and scheduled completion date for future tasks. "Partially complete" is not very informative, especially when some of the recommendations require additional assessment. Reference to the SGH Report just states what MAY be done, but not what is complete or what is planned.

12. **Page 7, Table 1d:** The DOD *"...concurred with all of SGH's recommendations for critical action prior to defueling."* See previous comments regarding the bypass lines and the additional evaluations we understand are currently underway, which may change statements made in this Plan. In general, inform the DOH when changes are made as soon as possible, so we do not provide comments based on old or changed information that may no longer be appropriate or useful.

13. **Page 7, Table 1e:** We understand that additional studies (i.e., NDAA and the DOD IG Report, EPA Inspection Report) may impact revisions to the Plan. Prior to incorporation into the Plan, we request the DOD discuss these changes with the DOH in order to provide the DOH an opportunity to provide early comment and to expedite review and approval as much as possible. In addition, include a description of the inspection and testing procedures that will help ensure that the repaired and modified systems were constructed in accordance with SGH's recommendations and will not leak. Testing methods should comply with applicable regulations and industry standards.

14. **Page 8, Table 1f:**
    a. *"As tasked in phase two of the Red Hill defueling plan, CNRH [Commander Navy Region Hawaii] is currently updating the Red Hill Response Plan, based on the November 2021 executed response."* We recognize that the Command Investigation identified deficiencies in the November 2021 response. Thus, these deficiencies should be addressed in the revised Plan. The Plan identified that the response plan will be completed by August 31, 2022, but does not identify when the response plan will be submitted to DOH. The preparation of the response plan was not included in Figure 1. We anticipate that the response plan will likely be based on the Facility's Spill Prevention and Countermeasure

Control (SPCC) requirements and Fuel Response Plans (FRP), and we understand that the EPA has required the Navy to submit their SPCC and FRP. Submit a copy of these documents to DOH at the same time as to EPA so that we may provide comment as early as possible.

b. The DOH approval of the Plan may not be provided until EPA and the DOH concerns and comments related to SPCC and FRP as it pertains to Defueling Operations are adequately addressed. The DOH concerns include the following:
    i. Pipeline system [from the tank gallery to receiving locations—piers, aboveground tank farm(s)] for defueling must be repaired (such as pipe supports) and tested (such as integrity testing) to the extent that they may accept fuel from the underground tanks without creating a risk of a release.
    ii. Facility Response Planning: The Navy must identify tunnel fuel containment weaknesses (for example during planned drills) and identify and implement repairs and contingency plans needed to provide adequate spill containment capacity and/or response resources to address all realistic release scenarios including:
        1) Fuel release within the lower access tunnel during defueling [and potential release into the subsurface];
        2) Release of fuel into Adit 3 (and potential release into the Red Hill Shaft); and
        3) Release of fuel into Hotel Pier and surface waters at Pearl Harbor.
    iii. Defuel operating procedures must be evaluated and approved so that best management practices to prevent spills and respond to spills can be integrated.
    iv. In the event of a spill during defueling operations there must be a clear incident command organization or system that is in place where the Navy On-Scene Coordinator is integrated with the Incident Commander or Qualified Individual. The incident command team should institute a unified command which includes the DOH, EPA, United States Coast Guard and other applicable parties.

c. Overall safety and contingency plan shall consider other potential emergency events (e.g., fire, earthquake) that may occur prior or during defueling. Discuss actions that will be taken during and after the event and basis for decisions to resume defueling. Such a plan should be in compliance with applicable OSHA and applicable Fire Codes and approved by the appropriate Fire Marshall. In addition, we recommend that the Navy assign a dedicated safety and emergency response officer for the defueling operations, whose job is to ensure all workers' compliance with the safety plan.

15. **Pages 8-9 states,** "DOD expects to be able to provide DOH updated critical path information in in [sic] September 2022." The DOH understands that the Plan, at this point, is iterative due to the ongoing investigations and assessments. However, we would anticipate that at the completion of Phase 2 and with the development of the CPM schedule, the main components of the Plan will be identified. The DOH understands that a CPM schedule is a living document and will be updated with both additional tasks and timeframes as conditions and information change. The DOH believes this is the best way to inform all parties of the expected tasks, time frames, changes and completion dates to complete a project within schedule. Provide a full CPM schedule of defueling activities while highlighting the critical path. We recognize that as schedules change, different activities may potentially become part of the critical path, and these activities should be identified.

16. **Page 10; Figure 1:** It is not clear that repairs will undergo Quality Assurance/Quality Control (QA/QC) inspections during the repairs (Phase 3). However, the text states otherwise in page 8, Table 1. The result of delaying QA/QC inspections of the repairs until Phase 4 (as shown in Figure 1) will result in longer schedules to defuel. Provide clarification.

17. **Table 2, Page 12:**
    a. Some recommendations from the SGH Report (SGH Process Hazard Analysis Facility Recommendations, Table 8.1, page 303) were not included in this list, but were listed as high priority. Add the following to the Plan:

ITEM	DEFICIENCY ID	DESCRIPTION	STATUS	PRIORITY
SGH Process Hazard Analysis Facility Recommendations Prior to Defueling (Table 8.1, page 303)				
1	1	To increase the reliability of operator response to normal, return to service, and emergency operations, develop written procedures detailing operator actions, including which steps should be field verified by two individuals, in order to reduce the likelihood of loss of containment. Training and refresher training should address both what and why. Ensure operating procedures, training materials, and training records are part of the document control system. (High Priority.)		1

Enclosure
July 22, 2022 Letter to Rear Admiral Stephen Barnett

Hawaii Department of Health Review
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Department of Defense, June 30, 2022

ITEM	DEFICIENCY ID	DESCRIPTION	STATUS	PRIORITY
2	25	Include verification step in Operations Order that piping is restrained before starting any evolution involving transferring liquid from any tank in Red Hill Tank Gallery. (High Priority.)		1
3	9	Consider adding observer and/or remote camera observation at Dresser Couplings during initial pressurization prior to defueling. (High Priority.)		2
4	38	Develop a car-seal or lock administrative control system and identify safety-critical manual valves which should be controlled to reduce the likelihood of human error. Valves to consider include but are not limited to 24" butterfly tank vent valves at Red Hill (RHL), manual block valves on the inlet or discharge of relief devices, manual block valves on bleed of the body cavity of twin-seal Double Block, and Bleed (DBB) device, key firewater supply, and distribution valves. (High Priority.)		3

Hawaii Department of Health Review
Red Hill Bulk Fuel Storage Facility, Oahu, Hawaii Defueling Plan,
Department of Defense, June 30, 2022

ITEM	DEFICIENCY ID	DESCRIPTION	STATUS	PRIORITY
5	99	The Navy policy is to use the Incident Command System (ICS)/Unified Command (UC) for structuring Navy spill response management organizations. The NAVSUP FLCPH fuel personnel manages the initial response. If additional resources are needed, the Federal Fire Department Incident Commander will establish an emergency command post and assume responsibility for the response. The Emergency Spill Coordinator or the Commanding Officer can contact the Region Navy On-Scene Coordinator to activate the Region Spill Management Team (SMT). The Region SMT will then establish other ICS functions. Port Operations is the coordinator for the Facility Response Team (FRT), an on-water contractor resource based on Ford Island. The roles, staffing, and resources for each organization need to be clearly defined, drilled, and aligned prior to defueling operations. (High Priority.)		NA
6	107	Consider additional operators and technical support for defueling operations. (High Priority.)		NA

b. Some items marked (In Appendix A-2, SGH Report, pages 404-405 of 882,) as high priority (P1) for structural repairs at Hotel Pier were not included as work needed for defueling. Since Hotel Pier is going to be critical for defueling, we recommend that the following items be included in Table 2 repair list for defueling: Items: HP-5, HP-6, HP-7, HP-8, HP-11, HP-12, and HP-13.

18. **Page 18** states, *"As repairs are completed and sources identified, DLA will identify the specific tank defueling sequencing."* However, we understand that the SGH Report suggested that tanks for a specified fuel should be defueled in the order of lower elevation to upper elevation. If correct, this should be considered in developing the operational sequencing of defueling.

Hawaii Department of Health Review
Red Hill Bulk Fuel Storage Facility, Oahu, Hawaii Defueling Plan,
Department of Defense, June 30, 2022

19. **Page 18, Phase 5:**
    a. Why not two (2) tankers to minimize transit time? Provide justification for the use of just one (1) tanker.
    b. Cycle time - Are resetting operations needed during fuel transfers of same fuel types or when switching fuels? Provide clarification.
    c. A 12-day cycle is subject to delays as listed. Provide bounded time estimates to include the delays that could result from the contingencies.