Potable Water Quality on RAN Vessels

Handling Note:

- Chief of Navy, Vice Admiral Mark Hammond to lead on Potable Water Quality for RAN Vessels.

Key Messages

- The Royal Australian Navy (RAN) takes potable water quality seriously and undertakes independent assurance and certification to demonstrate compliance with Defence's Seaworthiness Management System.
- Potable water quality on RAN vessels is managed in accordance with RAN policy, which requires water to meet the standards defined in the Australian Drinking Water Guidelines.
- The potable water quality testing regime and assurance framework required by RAN policy has identified a number of instances where consumption points have exceeded the Australian Drinking Water Guidelines.
- Immediate remediation actions undertaken include isolation of non-compliant consumption points, seeking health advice from the Fleet Medical Officer, embarkation of bottled water, and remediation investigations.
- The Naval Shipbuilding and Sustainment Group (NSSG) are co-ordinating remediation investigations with the support of Defence Science and Technology Group (DSTG) and Navy Engineering.
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Talking Points

. Potable water quality on-board RAN vessels is periodically tested for compliance with RAN policy. This regime is aligned with both the Australian Drinking Water Guidelines, and Australian Standards.

. Potable water quality assurance testing conducted on RAN vessels has revealed some instances of levels that exceeded the limits stipulated in the RAN policy.

. The most prevalent exceedances relate to heavy metals, primarily nickel, lead and cadmium. In these instances, remediation investigations are undertaken to identify the root cause of the contamination and identify solutions to remediate the contamination issues.

. The potable water quality testing regime in RAN policy is more stringent in regards to metals than that required for domestic supply. This is particularly in regards to the frequency of testing and response to non-compliant results.

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If pressed: How does Defence ensure potable water quality standards are met onboard RAN vessels?

- During acquisition, certification and tests are conducted to assure the potable water system delivers water compliant with the Australian Drinking Water Guidelines. This includes providing evidence that the equipment and materials used in the construction of the potable water system are appropriate for such an application, in line with a recognised standard for testing of products for use in contact with drinking water.
- The relevant sustainment organisation for the vessel, supported by ship's crew, ensure the potable water system is maintained, and potable water quality is tested in accordance with RAN policy.

If pressed: How has it eventuated that the potable water quality does not meet the Australian Drinking Water Guidelines?

- Testing undertaken on water quality and the potable water system materials has indicated that the source of metal contamination is likely to be from the materials used in the construction of the system.
- These non-compliances can also be the result of factors such as:
  - Corrosion of materials and through-life degradation of the system.
  - The system may be reacting to the chemistry within the produced water, which could be aggressive to component materials.
- The RAN has recently strengthened assurance requirements for potable water systems.

If pressed: What safety hazard does exposure to and consumption of sub-standard water pose to personnel?

- The Australian Drinking Water Guidelines are derived to account for the needs of an individual through a normal lifetime, including sensitive sub-populations, such as young children, the seriously ill and the elderly.
- The RAN context of operation differs, where sensitive sub-populations are not present and personnel only serve on board RAN vessels for a limited duration.
- In accordance with RAN policy, control measures and corrective actions are implemented where testing results exceed the Australian Drinking Water Guidelines. Health advice regarding long term exposure to the concentration of contaminants experienced on RAN vessels has consequently been evaluated to be low risk, based on the reported levels of containments, the short duration of exposure and range of mitigation factors that have been implemented. The health and medical staff responsible for advice in regards to health effects of contaminants have assessed the current health risk to be low.
- Personnel exposure to elevated levels of contaminants is captured in Defence's work health and safety incident management system (Sentinel).

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If pressed: What steps are taken to manage the potential health impact on personnel due to exposure to non-compliant drinking water?

- The RAN is committed to providing its sailors with drinking water that is compliant with the Australian Drinking Water Guidelines.
- If potable water is tested and is above the relevant exposure limits, where possible, the testing point is isolated and alternate sources of potable water are arranged e.g. bottled water.
- System flushing is undertaken and repeat testing occurs to determine levels of contaminants. In many instances, flushing has resulted in reduced levels of heavy metals to below the levels required within the standard.
- The contaminates of concern, namely cadmium, lead and nickel cause harm to humans from long term exposure over significant time periods, and it is unlikely that short term exposure will result in negative health effects.
- On 10 August 2023, Comcare received information regarding potable water concerns on-board the Hobart Class ships from a Department of Defence subcontractor. Comcare commenced an inspection in relation to this matter on 21 August 2023.
- The inspection concluded that there was nil non-compliance with the *Work Health and Safety Act 2011* and further highlighted that the retrofitting of bubblers with water filters and continued water testing was in accordance with the Australian Drinking Water Guidelines and would ensure the safety of drinking water on-board the Hobart Class ships.
- The Inspector concluded that Department of Defence, as the person conducting business or undertaking, complied with their WHS duty to ensure the provision and maintenance of a work environment without risks of harm to workers. The inspection was closed 22 September 2023.

If pressed: What steps have Navy taken to restore the availability of compliant potable water on RAN vessels?

- Where necessary, remediation investigations are initiated to establish the cause of contaminant, and inform management to prevent further exposure.
- Investigations are occurring in collaboration with Defence Science and Technology Group and Navy Engineering to identify the root causes of system contamination. The intent is to identify options to address the root causes of contamination.
- Current remediation strategies are aimed at identifying interim solutions to manage potable water quality. Long-term solutions will require changes to equipment and materials.
- A trial installation of point of use filters has shown some preliminary success in the reduction of heavy metal contamination.

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- Point-of-use filters have been fitted at all drinking water fountains onboard Hobart Class ships to provide additional layer of protection against potential contamination of potable water.

- Further trial of point-of-use filters, similar to those on Hobart Class ships, is scheduled to take place onboard HMAS Supply. If successful, all direct potable water consumption points onboard Supply Class ships will be fitted with these filters. This is expected to occur by Quarter 1/2024.

Background

- The RAN has policy to manage water quality and testing of potable water systems. The purpose of this policy is to provide direction as to how Fleet units are to comply with the Australian Drinking Water Guidelines with respect to potable water management.

- Recent instances of non-compliance have led to the establishment of a Potable Water Assurance Working Group in July 2022. This group brings together the relevant engineering, health and safety stakeholders to review current issues and recommend updates to policy and practices.

Supporting Information

Questions on Notice (QoN)

- No QoNs asked.

Freedom of Information (FOI) Requests

- No FOIs requested.

Recent Ministerial Comments

- No recent comments.

Relevant Media Reporting

- On 19 October 2023, ABC news published an article by Andrew Greene titled: Contaminated water supplies hit HMAS Supply and her sister ship HMAS Stalwart - ABC News, the water supplies on both vessels are currently unsuitable for human consumption.

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