

MEMORANDUM

Date: 8 March 2022

To: Pacific Islands Forum Secretariat

From: **Independent Expert Panel**

- [Dr Ken Buesseler](#), Senior Scientist and Oceanographer of the Woods Hole Oceanographic Institute
- [Dr Arjun Makhijani](#), President of the Institute for Energy and Environmental Research
- [Dr Antony Hooker](#), Associate Professor and Director, Centre for Radiation Research, Education and Innovation, The University of Adelaide
- [Dr Ferenc \(Jacob Rolf\) Dalnoki-Veress](#), Scientist-in-Residence & Adjunct Professor at the James Martin Center for Nonproliferation Studies, Middlebury Institute of International Studies at Monterey
- [Dr Robert H. Richmond](#), Research Professor and Director at the Kewalo Marine Laboratory in the University of Hawaii at Manoa

Subject: **Concerns and recommendations regarding the discharge of cooling water from the Fukushima Nuclear Power Plant**

The issue

The Tokyo Electric Power Company (TEPCO), under the direction of the Japanese Government, plans to release over 1 million tons of radioactively contaminated cooling water from the Fukushima Daiichi Nuclear Power Plant into the Pacific Ocean, starting in the first part of 2023.

This rush to begin discharge is premature, at best, for a variety of reasons, including the facts that (i) details are lacking on the full range of radioactive contaminants and their release plans, (ii) public comments made on these plans have yet to receive an adequate response, (iii) a full and fair consideration of collateral and reputational damage, including to fisheries and tourism, has not been made, and (iv) the planned course of action needs to be considered in light of International Law and restrictions on discharge of radioactive materials.

The concerns

This contaminated water contains over 80 different radionuclides, including those with long half-lives, that pose particular threats to human and environmental health. Fewer than 20% of the 1,000+ storage tanks have had complete radionuclide analyses reported to date. Only two – less than one-fifth of one percent of all tanks – have been subjected to, and reported to the public, results from the Advanced Liquid Processing System that is planned to be used to remove the remaining radionuclides with the exception of tritium.

Many of our direct concerns are implicit in the questions that the Pacific Islands Forum (PIF) expert panel developed, for which we await substantive responses.

The TEPCO plan presents serious concerns for the countries that comprise the PIF as a transboundary issue, due to potential for broad distribution and biological uptake and accumulation of radioactive materials. Specifically, beyond the question of radiation dose to people, there is the question of whether a full assessment has been made relating to the potential ecological damage.

A rushed schedule in the face of considerable opposition within and outside of Japan and in light of the lack of full responsiveness to public concerns will further erode public trust when the re-establishment of such trust is essential before an undertaking of the magnitude proposed is begun. Finally, a rush to begin the discharge process is unwarranted since the proposed dilution and rate of discharge means that the discharges would go on for decades, and space could be made available for additional storage.

We are concerned that the IAEA has signed off on the TEPCO plan given this lack of data that has yet to be released for scrutiny by independent experts and full consideration of the issues the PIF experts raised as reflected in the questions submitted on 18 February 2022 to Japan by PIF. It is possible that the IAEA has been given data that are not available to the public. Even so, TEPCO itself has stated its tank sampling is far from complete and that the testing of the ALPS system for treating the water is very limited.

Decisions on the human and environmental safety of the proposed discharge in the face of insufficient data set the stage for a Type II error, accepting a false hypothesis, which is the most concerning in such matters.

We request access to the information provided to the IAEA and that has been used to make any determinations on radionuclide release. We are open to a discussion with the IAEA personnel involved, should the PIF wish to initiate such a discussion.

Finally, the legal issues surrounding the discharge under the normal operating permits have not been publicly addressed, and we argue that the planned course of action disregards core principles of intergenerational sustainability, cumulative impacts and the precautionary principle.

Recommendations

While the IAEA has offered their support for this plan, we believe this support is premature, at best, and should not be relied on by the PIF.

The issues and concerns we have raised need to be addressed by TEPCO; the data and answers need to be fully evaluated after that. The data are fundamentally inadequate, and the issues of transboundary economic reputational damage and transboundary ecological damage have not been thoroughly documented.

We recommend that PIF Members reject the proposed TEPCO action at this time until the concerns we have raised are fully and transparently addressed. The issue of support for the plan or the question of other alternatives can be evaluated at that time with the full consideration that a decision of this magnitude deserves.