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Review of the US Navy's Human Health Risk Assessment of the Naval Air Facility at Atsugi, Japan

Testimony of

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and

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Committee on Toxicology
Board on Environmental Studies and Toxicology
Division on Earth and Life Studies
National Research Council
The National Academies

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Good morning Mr. Chairman and members of the Committee. Thanks to Senator Akaka and members of the Committee on Veterans' Affairs for your concern about veteran's health. My name is Charles Gene Feigley. I am a professor of environmental health sciences at the University of South Carolina, Arnold School of Public Health.. I am Principal Investigator of a DoD-sponsored project testing the use of copper in air conditioning systems to improve air quality and reduce illness in the military. I am also Principal Investigator of the University of South Carolina's Center for Public Health Preparedness funded by the Centers for Disease Control and Prevention to assist State, local, and tribal health agencies and their community partners prepare for response to a wide range of public health emergencies. In addition, I have served on a number of committees of the National Research Council (NRC), including as Chair of the NRC Subcommittee that prepared the report Review of the U.S. Navy's Health Risk Assessment of the Naval Air Facility at Atsugi. The National Research Council is the operating arm of the National Academy of Sciences, National Academy of Engineering, and the Institute of Medicine of the National Academies, chartered by Congress in 1863 to advise the government on

matters of science and technology. I am here before you today because of my experience as a volunteer serving on that NRC Committee.

The NRC report, Review of the U.S. Navy's Health Risk Assessment of the Naval Air Facility at Atsugi, was prepared in response to a request from the US Navy for an independent review of the Navy Environmental Health Center (NEHC) report NAF Atsugi, Japan Human Health Risk Assessment Summary of Findings, Conclusions and Recommendations, Draft Final, January 2000, as well as a number of supporting documents for that risk assessment. The NEHC had conducted that risk assessment because of concerns that had been raised by the residents of NAF Atsugi—US Navy personnel and their families—regarding the health effects of the Enviro-Tech incinerator facility (formerly called the Shinkampo or Jinkanpo incinerator complex). That complex was adjacent to the US Naval Air Facility (NAF) at Atsugi, Japan, southwest of Tokyo. Enviro-Tech was a privately owned waste-combustion facility that consists of three incinerators, a waste-staging area, and an ash-holding area. The concerns were related to exposure to emissions from the incinerators and to chemicals resulting from the storage, handling, and disposal of waste material at the facility. The risk assessment was conducted after a previous NRC subcommittee had recommended that a comprehensive health risk assessment of NAF Atsugi be conducted.

The NRC Subcommittee on the Atsugi Incinerator — which consisted of members selected for their expertise in toxicology, epidemiology, industrial hygiene, engineering, exposure assessment, and risk assessment—was specifically asked to:

1. Review the adequacy of the methods used to assess risk, the uncertainties identified, the risks to susceptible subpopulations (such as pregnant women and young children), and the scientific validity of the conclusions drawn.
2. Recommend, depending on its evaluation, research to fill data gaps and options for mitigating the risks associated with exposure to the incinerator emissions.

It is important to note that, as you can see from those specific tasks, the Subcommittee was not asked to determine the potential health effects from the incinerator, but to review the assessment that was conducted by the NEHC. In its review the Subcommittee identified a number of aspects of the risk assessment that were exemplary and others that needed improvement.

The Subcommittee noted that the NEHC risk assessment included a rigorous quality-assurance and quality-control program, and the Subcommittee therefore had confidence in the accuracy of data collected. The Subcommittee was pleased with the broad number of air pollutants that NEHC monitored and the collection of meteorological data. It also commended the NEHC for calculating the risks of acute- and chronic-toxicity end points for different subpopulations.

The Subcommittee was concerned, however, about inconsistencies in the objectives of the risk assessment, some technical aspects regarding how the collected data was used in the risk assessment, and the interpretation of the data and risk assessment findings by the NEHC. The Subcommittee also commented on the lack of uncertainty analysis or characterization in the risk assessment.

The Subcommittee concluded that NEHC had collected a large amount of sampling data at NAF Atsugi. If analyzed and interpreted appropriately, those data might have been adequate to

determine whether air pollution at NAF Atsugi poses a health risk and how much the incinerator facility contributes to that pollution. However, the analyses of the data were inadequate to draw conclusions about the health risks for persons residing at NAF Atsugi and about the contribution of the incinerator to those risks. In addition, NEHC had interpreted some of the results of the risk assessment without taking into account the meaning and limitations of the risk-assessment process. The Subcommittee concluded that aspects of the analyses and interpretation of the data, not the underlying data themselves, constituted the main limitation of the risk assessment. The Subcommittee provided recommendations to improve the NEHC risk assessment, including recommendations for the planning of risk assessments, determination of attributable risk, analysis of air-monitoring data, interpretation of the risk assessment, treatment of uncertainty, information gaps that should be filled, and improvements in the presentation and organization of the NEHC draft summary report itself. Given the aforementioned limitations of the Navy's risk assessment draft summary report, the Subcommittee found that the analyses presented did not determine reliably whether military personnel and their families incur increased health risks by living at NAF Atsugi. Nor did the analyses presented reliably determine the contribution of the incinerator facility to health risks.

With that, I would once again like to thank you for inviting me to testify before this committee. I appreciate the important work conducted by the Committee on Veterans' Affairs and welcome any questions you may have.