

NUCLEAR REGULATORY COMMISSION WEATHER PROGRAMS

The United States Nuclear Regulatory Commission (NRC) licenses and regulates all nuclear facilities subject to the Atomic Energy Act of 1954 as amended. The licensing and operation of these nuclear facilities require the identification of meteorological and climatological conditions that can affect the safe operation of the facility, and that provide input to the assessment of the radiological impacts of any airborne releases from the facility.



Within the NRC, the Offices of Nuclear Reactor Regulation and New Reactors conduct reviews of nuclear power plant siting, design, construction, and operation while the Offices of Nuclear Material Safety and Safeguards and Federal and State Materials and Environmental Management Programs conduct similar reviews of materials and waste facilities. These reviews include consideration of meteorological factors. The offices also conduct rulemaking to establish regulatory requirements.

The NRC Regional Offices assure that NRC licensees comply with the regulatory requirements. Together with the NRC Office of Nuclear Security and Incident Response, they also carry out NRC responses to nuclear facility emergencies. The NRC Office of Nuclear Security and Incident Response has been evaluating performance of large scale (greater than 1000 people) evacuations due to natural and man-made causes in the contiguous 48 states. This is documented in NUREG/CR-6864, "Identification and Analysis of Factors Affecting Emergency Evacuations". An additional study continues to analyze the large evacuations of 2005.

The Office of Nuclear Regulatory Research (RES) plans, recommends, and implements a program of nuclear regulatory research for nuclear power plants and other facilities regulated by the NRC. RES provides technical support, technical tools, and information to identify and resolve safety issues for current and new designs and technologies through testing, data development, analysis and national and international collaboration. RES also develops regulatory guidance and participates in the development of criteria and consensus

standards related to the protection of the public health and safety and the environment.

At the present time, the NRC is a user of meteorological information rather than a performer of research in this field. Meteorological data will be used to assess radiological impacts of routine airborne releases from facilities and to evaluate the impact of proposed changes in plant design or operation on unplanned releases. Further, the NRC will use current meteorological information and climatological predictions of long-term (100 years) extreme meteorological events to evaluate new reactor designs and sites. Information of this type is also important for developing scenarios of climatological impacts on the isolation of long-lived nuclear wastes. The NRC also maintains an interest in the transport and dispersion of airborne, hazardous, nonradioactive materials, and the effects of extreme meteorological events on the safe operation of nuclear facilities.

Figure 3-NRC-1. Diablo Canyon Nuclear Power Plant, California. (Pacific Gas & Electric photo)



