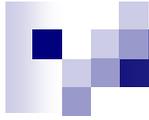




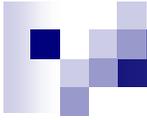
# FOUNDATION FOR NUCLEAR STUDIES PANEL

## TRITIUM RELEASES AT NUCLEAR POWER PLANTS

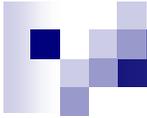
Stuart Richards, Deputy Director  
Division of Inspection and Regional Support  
USNRC  
March 31, 2006



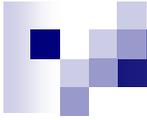
- What is tritium and where does it come from?
  - A naturally occurring radioactive form of hydrogen found in air and water
  - Occurs naturally due to cosmic ray interaction with the Atmosphere and falls to the earth as rain
  - Produced by nuclear weapons testing
  - By-product of nuclear reactor operation



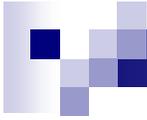
- What are the limits for releasing radioactive liquid to the environment at a nuclear power plant?
  - NRC limit is 100 millirem per year
  - NRC design objective to meet “As-Low-As-Reasonably-Achievable” (ALARA) is 3 millirem per year
  - Average radiation dose to the public from natural and man-made sources is about 360 millirem per year
  - Cross country airplane flight is about 3 millirem



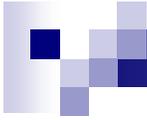
- What is the EPA limit for tritium in drinking water?
  - EPA limit due to man-made radionuclides is 4 millirem per year
  - If all attributed to tritium, this equals 20,000 picocuries per liter
- How do utilities meet these limits?
  - Radioactive Effluent Controls Program
    - Control, Monitor, Document, and Report
  - Radiological Environmental Monitoring Program
    - Sample various environmental pathways



- What are the reporting requirements to the NRC?
  - Annual Reports
  - Special Reports
- What is the NRC oversight role?
  - Regulations
  - Licensing
  - Inspection
  - Event Response



- What is the NRC response to recent tritium releases?
  - Assess impact on public health
  - Review/inspect utility actions and split samples
  - Report activities in publicly available documents
  - Take further regulatory action where necessary
  - Increase communications with the public
  - Web page on tritium at the NRC Website:  
<http://www.nrc.gov>
  - Lessons Learned Task Force Chartered



- What will we learn from the Lessons Learned task force?
  - Assess industry historical record
  - Consider international perspectives
  - Assess regulatory framework
  - Make recommendations for possible change to the Commission