

The NIST neutron source (NBSR) operated for 153 full power (20 MW) days or approximately 94 % of the scheduled time for this year. A typical operating year consists of seven cycles. A cycle has 38 days of continuous full power operation, followed by 11 days of shutdown maintenance, refueling, and startup preparations. This year, the NBSR was in a scheduled extended shutdown for maintenance and facility improvements until March 6, 2002. Those improvements included a new cold source, new transformers and switchgear for the building electrical system, a new plume-abatement cooling tower, and new shim arm seal assemblies. The new seal assemblies have characteristics superior to the old assemblies and provide greater assurance of dependable shim arm operation. The replacement of the electrical equipment and the cooling tower will increase the reliability of the NBSR over the next 25 years. In pursuit of that same goal, detailed inspections of vital systems and components were completed using ultrasonic probes, visual examinations, and remote examinations with miniature cameras and fiber-optic imaging equipment. The only major maintenance item scheduled for completion this shutdown was a



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determination of the status of the Thermal Column Tank Cooling System. After a thorough investigation, the capability of the Thermal Column was preserved by reconfiguring the cooling system and replacing original components within the biological shield. A new tank has been ordered and will be available if it becomes necessary to replace the tank in the future.

A number of important personnel issues were addressed in FY2002, including the effect of a surge of



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impending retirements on the NBSR. All licensed operators were requalified this year. Three new senior operators were licensed by the Nuclear Regulatory Commission, a new deputy chief for Operations was appointed, and significant progress was made on addressing recruitment and retention questions.

Substantial changes to facility security were completed this year to fulfill the intent of the President's directives on homeland security. A vehicle exclusion area was established and surveillance equipment was improved. Other changes are on-going and Operations & Engineering is consulting with the U.S. Nuclear Regulatory Commission on security matters on a regular basis.