APPENDIX C

UNCLASSIFIED NAVAL NUCLEAR PROPULSION INFORMATION

Technical objective of a nuclear propulsion project if objective is generalized

Compilation of schedules concerning procurement, manufacture, delivery or repair of primary and secondary plant components

Information regarding status of propulsion plant design, construction, overhaul, and refueling or defueling (e.g., schedules, priorities)

Capital cost of overall reactor plant excluding core costs

Core fabrication costs excluding the costs of the special nuclear material

The fact that a Reactor Safeguards Examination or Post-Overhaul Reactor Safeguards Examination occurred on a specific naval vessel on a specific date including the associated location and schedule

Weight summaries that do not reveal total plant or ship weight, or permit weight comparisons of propulsion plants or ships

Weights of individual reactor components or propulsion plant components

X-ray techniques used in radiographing fuel and poison elements

Corrosion test parameters (including pressure and temperatures) and tests performed on fuel elements when applied to test coupons not containing fuel or poison and not identified with a specific core

Testing methods for Zircaloy-to-Zircaloy bonds

Procurement and manufacture of hafnium and zirconium alloy shapes including inspection records and acceptance criteria

Design and fabrication or source rods, thermocouples and other core instrumentation components provided core design is not revealed

Equipment and tools for refueling, core installation and reactor maintenance, including drawings, specifications, and technical manuals

General description of reactor closure heads, and the methods for preloading the closure head

Design of the reactor servicing system including refueling equipment used in the Naval Nuclear Propulsion Program

Radiation levels on contact with reactor servicing equipment

Procedures and parameters used for weld, welder, and welding machine qualification

Repair procedures for noncore components

In-pile properties and behavior of hafnium, Zircaloy-2 (Zr-2), Zircaloy-3 (Zr-3), and Zircaloy-4 (Zr-4), provided information is associated with general type testing, and not application to a ship or prototype

Techniques used for expended core examinations provided there is no association with a specific core

Dimensions (width, length, and thickness), general corrosion (weight gain), and mechanical metallurgy or general mechanical and physical properties (tensile, charpy, creep, growth, UT cracking, thermal characteristics, and compact tension) of preirradiation and postirradiation test specimens and test assemblies

Photomicrographs of Zircaloy-2 (Zr-2), Zircaloy-3 (Zr-3), and Zircaloy-4 (Zr-4) cladding, hafnium or structural material where the material is not associated to a specific project, operating prototype or specific reactor core

General corrosion and mechanical metallurgy and general mechanical, physical, fabrication, weldability, and unirradiated and postirradiated properties of specific materials

General wear properties of specific materials

Weldability of primary coolant system components

The fact the ultrasonic testing of a specific operating reactor vessel is being planned or conducted

Mechanical, physical, and metallurgical properties; and fabrication and weldability; of materials associated with the Naval Nuclear Propulsion Program

Neutron cross sections

Overall shielding design and shield design radiation criteria for land-based facilities

Individual shield panel thickness or inspection record

Radiological survey results of reactor plant components which are not installed in a ship

Radiation levels near the ship or prototype when the reactor is shut down

Compilation of individual calculational programs to form a "Unified Shield Program manual or user's guide"

Reactor coolant chemistry and secondary system water chemistry analysis methods

Activity of waste products and composition of secondary coolant waste products

Methods for decontamination of components removed from the plant

Primary relief valve pressure setting

Flow through individual primary plant components that does not reveal reactor coolant system flow rate

Panel assembly and instrument drawings of reactor plant instrument and control systems not required for direct control of the primary system. Examples are steam generator water level control, reactor compartment isolation, pump noise monitor, and radiation monitoring

Outline drawing of primary system components when separated from assembly, design and operating data

The number of primary or secondary loops

The number of major reactor plant instrumentation and electrical equipment components per ship or plant

The number of reactor instrumentation or electrical components or cabinets operating, or required to be operating, at full power

The design of reactor servicing equipment intended for use with the rod control system

Design details of naval nuclear propulsion plant reactor containment systems

Steam system design temperature and pressure

Feed and condensate temperature

Technical manual description of a propulsion unit (turbine and gears or turbine generators)

Steam plant fluid system descriptions and diagrams except main steam, main feed, main condensate, and steam generating systems

Chemical cleaning hardware or water jet cleaning system hardware (including operating instructions), system design, system operation or test procedures

Methods of verifying or qualifying computer programs which reveal attributes specific to the Naval Nuclear Propulsion Program

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