

Surveillance Capsule Testing

INTRODUCTION

The requirement to conduct a reactor pressure vessel (RPV) surveillance program is given in 10 CFR 50 Appendix H, and the detailed implementation is described in American Society for Testing and Materials (ASTM) standard E 185. For most nuclear plants throughout the world, between 3 and 5 surveillance capsules (typically 3 for boiling water reactor (BWR) plants and 5 for pressurized water reactor (PWR) plants) were placed in the downcomer near the vessel inner diameter surface prior to initial startup. These capsules usually contain neutron dosimeters, tensile specimens, Charpy specimens, and sometimes fracture toughness specimens. These capsules are pulled and analyzed periodically throughout the plant life to monitor the neutron damage to the RPV.

SURVEILLANCE TESTING PROGRAM

MPM maintains a Nuclear Regulatory Commission (NRC) license to receive and test radioactive surveillance capsules. This work is performed under the MPM Nuclear Quality Assurance Program. The services provided under the MPM testing program are summarized below:

- MPM provides the shipping container and the transportation from the plant site to MPM's laboratories
- MPM provides the information needed for preparing the shipping papers
- Capsule opening, inventory, and specimen cleaning
- Dosimetry analysis to determine specific activities
- Neutron transport analysis in accordance with Regulatory Guide 1.190
- Mechanical property measurements for Charpy, tensile, and fracture toughness specimens
- Waste disposal
- Optional specimen storage
- P-T curve calculation



FOR MORE INFORMATION

If you would like a price quotation or additional information concerning MPM's services or products, please contact us at the below listed address:

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