

INTRODUCTION

Nuclear power plants contain surveillance capsules with neutron dosimeters and mechanical property test specimens. These capsules are pulled periodically throughout the life of the plant to monitor the properties of the pressure vessel. When the capsules are analyzed, a neutron transport analysis is performed to determine the neutron fluence to the capsule and the vessel and to compare the calculated results with the dosimetry measurements. In addition, neutron transport analyses are needed in other cases where the fluence to a primary system component may affect the in-service performance of the component. Examples include BWR shrouds and PWR vessel internal components.

TRANSPORT MODEL DESCRIPTION

MPM capabilities include calculation of neutron transport for a wide variety of geometries of interest. For typical cases where the locations of interest are within the reactor beltline region, synthesis of two dimensional calculations can be carried out using discrete ordinates transport methods. The DORT code is selected for these analyses because of the ease of use, speed of calculations, and routine acceptance by the Nuclear Regulatory Commission (NRC). MPM uses the latest cross section libraries and the calculations fully satisfy the requirements of NRC Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence". In more complex cases, three dimensional discrete ordinates or Monte Carlo transport calculations can be carried out.



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:

Address:	MPM Technologies, Inc. 2161 Sandy Drive State College, PA 16803
Individual:	Dr. Michael P. Manahan, Sr.
Phone:	814-234-8860 (extension 121)
FAX:	814-234-0248
Website:	www.MPMTechnologies.com
Email:	MPManahan@MPMTechnologies.com

2161 Sandy Drive

State College, PA 16803-2283

www.MPMTechnologies.com

USA

Office (814) 234-8860

FAX (814) 234-0248