



U. S. Power Uprate Program

Michael C. Cullingford
Special Assistant Technical
Policy and International Liaison
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission



Overview

- Types of Power Upgrades
- Applications & Megawatts Added
- Priority
- Effectiveness & Efficiency Plan
- Review Process
- Inspections

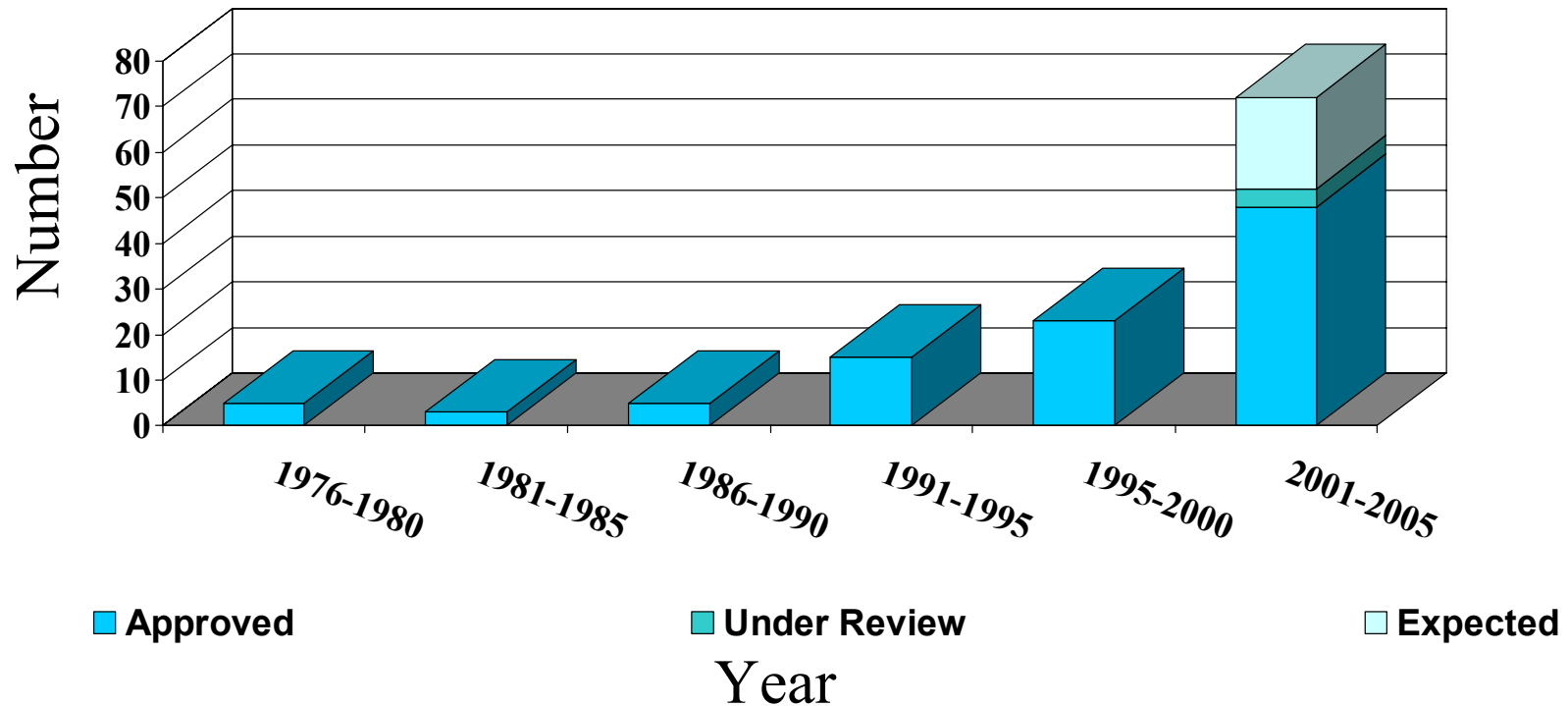


Types of Power Upgrades

- Measurement Uncertainty Recapture (MUR)
- Stretch Power Upgrades
- Extended Power Upgrades (EPUs)

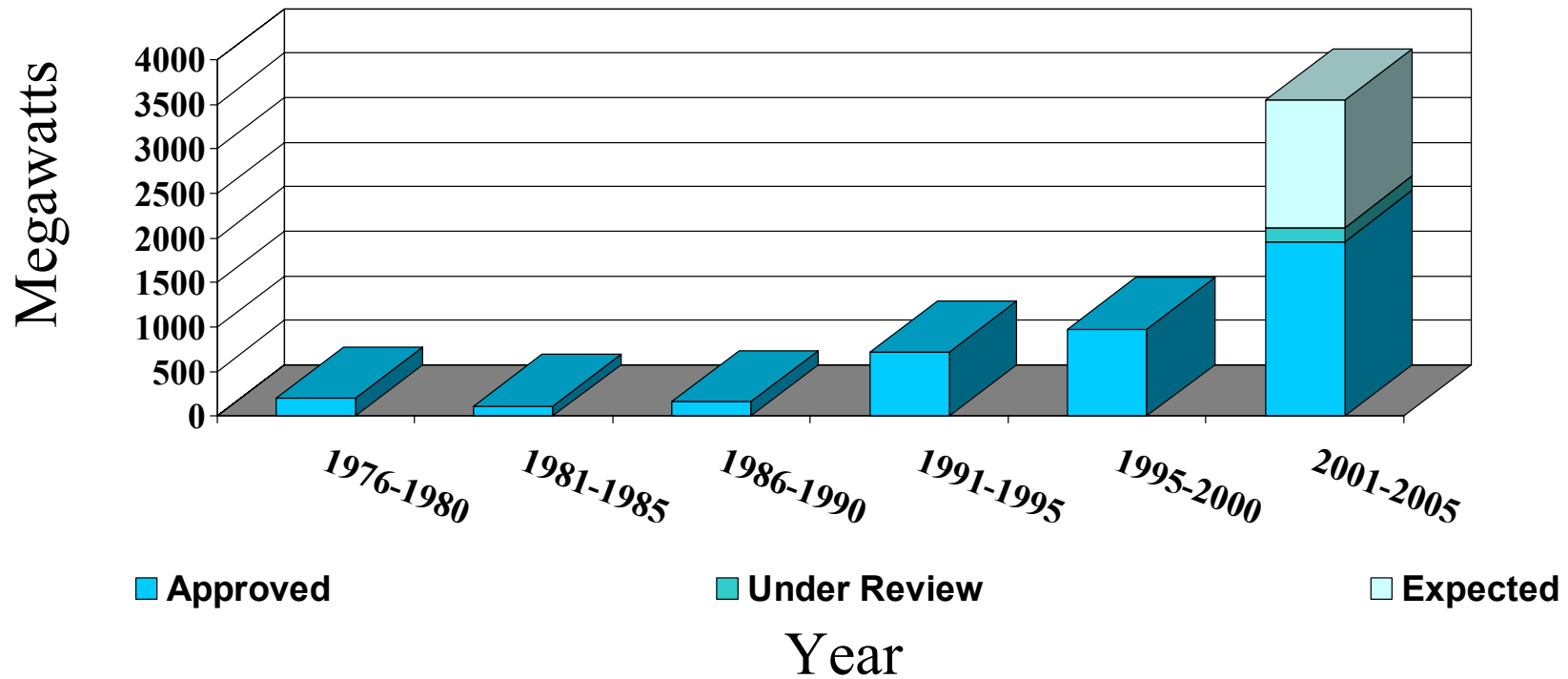


Power Uprate Applications





Megawatts Electric





Priority

- High Priority
- Among Most Significant Licensing Actions
- Timeliness Goals
 - 6 Months for MUR Power Uprates
 - 9 Months for Stretch Power Uprates
 - 12 Months for EPU



Effectiveness & Efficiency Plan

- Review Standard
 - Standardize Licensees' Applications
 - Standardize NRC Review
 - Provide Guidance for NRC Staff
 - Considered Past Reviews and Lessons Learned

- Project Management
 - Semiannual Surveys
 - Detailed Process Models
 - Scheduling and Monitoring
 - Planning and Forecasting Resource Needs
 - Program Monitoring and Trending



Power Uprate Review Process

- Change to License and Technical Specifications
- License Amendment Process
 - 10 CFR Part 50, §50.90 – Application for Amendment
 - 10 CFR Part 50, §50.91 – Notice for Public Comment/State Consultation
 - 10 CFR Part 50, §50.92 – Issuance of Amendment
 - Other regulations that form licensing basis of the plant
- Environmental Impacts – 10 CFR Part 51
- Advisory Committee on Reactor Safeguards Review (EPU)



Review Scope

- Reactor Vessel
- Reactor Core/Fuel Performance
- Reactor Coolant System
- Containment Performance
- ECCS/LOCA
- Limiting Transients
- Special Events
- Radiological Consequences
- Erosion/Corrosion
- System/Component Capabilities
- Instrumentation & Controls
- Electrical Power & Environmental Qualification
- Human Performance
- Risk Evaluation for Large Power Upgrades



Power Uprate Review Guidance

- Existing Standard Review Plan
- Template Safety Evaluations
- Regulatory Issue Summary 2002-03 (MURs)
- Draft Review Standard RS-001 (EPU's)



Power Uprate Inspections

- Inspection Procedure 71004
 - Intent: Verify most risk significant aspects of power uprates greater than 7.5%



Power Uprate Information

- Available at NRC website

<http://www.nrc.gov/reactors/operating/licensing/power-uprates.html>