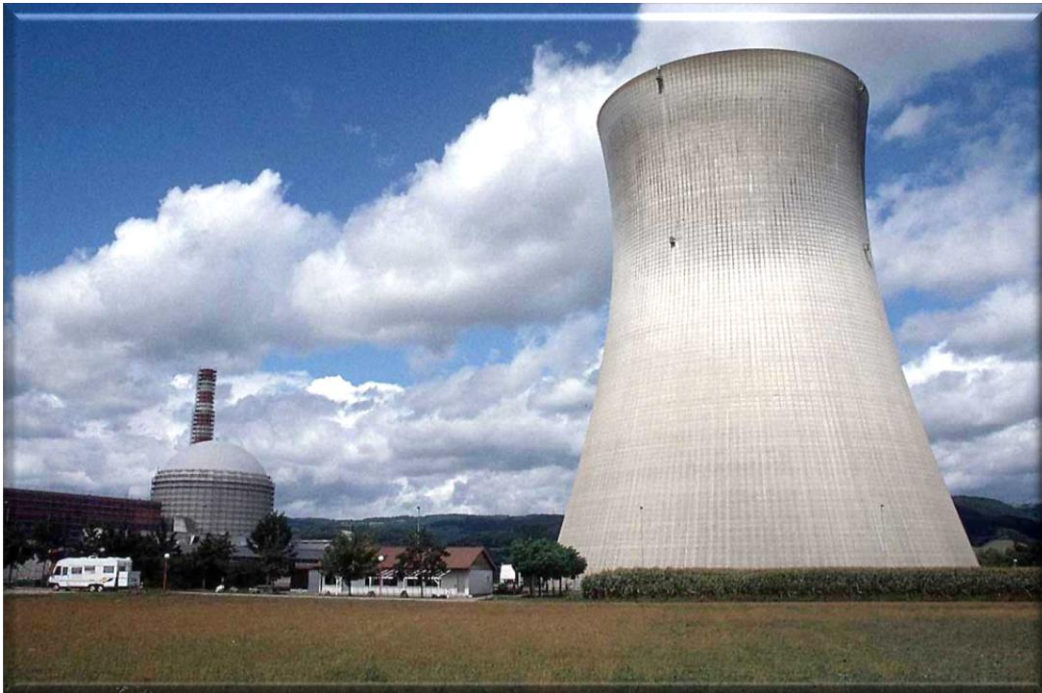


Empyrean Services Case Studies





Case Studies

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Case Study : Corrective Action Program Effectiveness Improvement

Category: Existing Plant Services

Client: Large North American Nuclear Utility

Solution:

1. Reviewed Corrective Action Program pertaining to assurance of Corrective Action Effectiveness
2. Reviewed CARB and applicable CAP reports to determine significant issues
3. Reviewed selected corrective action effectiveness reviews performed by Bruce Power
4. Identified programmatic issues, commonalities and trends
5. Identified generic implications of identified issues and trends
6. Recommended actions for consideration by client management

Specific Expertise Provided:

1. Seasoned Corrective Action Program expertise
2. Utilization of industry best practices

Size: 1800 Manhours



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Case Study : Emergency Diesel Generator (EDG) Reliability Improvement

Category: Existing Plant Services

Client: Large mid-western Nuclear Utility

Solution:

1. Review plant condition reports and maintenance history
2. Review regulatory performance history
3. Develop project plan and management communications
4. Identify recommended actions targeted to improve performance
5. Manage implementation of corrective actions

Specific Expertise Provided:

1. Industry renowned expertise in EDGs
2. On-site dedicated project management of corrective actions

Size: 3400 Manhours

Case Study : Independent assessment to document effectiveness of the Operating Experience Program

Category: Existing Plant Services

Client: Large mid-western Nuclear Utility

Solution:

1. Review INPO SERs, SOERs and other operating experience related documents to determine applicability
2. Review utility's response to applicable OPEX documents
3. Through a critical evaluation, assess adequacy of actions identified
4. Independently verify effectiveness of the implemented actions
5. Identify gaps, weaknesses and determine corrective actions

Specific Expertise Provided:

1. Senior experts with multi-disciplined expertise
2. Preparation of comprehensive report later reviewed and found acceptable by the NRC

Size: 5200 Manhours



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Case Study: Develop and implement a Start-up and Test Program

Category: Existing Plant Services

Client: Large DOE Complex Nuclear Facility

Solution:

1. Develop all program documents and lower tier implementing procedures
2. Process all procedures through the client's procedure review and approval process
3. Develop and implement charters for the Joint Test Working group and Joint Test Group
4. Develop and implement Senior Test Director training and qualification program
5. Develop and conduct training for JTG and JTWG members using SAT principles
6. Manage program through initial implementation

Specific Expertise Provided:

1. Diverse team with varying expertise (procedure writing, training, executive oversight)
2. Executive leadership and sponsorship for program success by Empyrean Services

Size: 34,000 Manhours

Case Study: Conduct Management Assessments

Category: Existing Plant Services

Client: Various Commercial and DOE Complex Nuclear Facilities

Solution:

1. Conduct assessment of the effectiveness of work management program (AP-928) at an operating nuclear facility
2. Perform an assessment to identify optimum outage cycle durations
3. Perform annual QA Program Effectiveness Assessment
4. Conduct a management assessment of Engineering functions for a nuclear facility under construction to identify resource strategies and a vision for success
5. Perform an assessment of the fuelling machine maintenance strategy
6. Perform an assessment of the 10CFR 70.72 evaluations

Specific Expertise Provided:

1. Executive and senior level expertise with diverse experience
2. Utilization of expertise customized to the task at hand

Size: 52,000 Manhours

Case Study: Staff and manage client's design agency function

Category: New Nuclear Build

Client: New Nuclear Facility under Construction

Solution:

1. Develop all program documents and lower tier implementing procedures to assume the design agency function from the A/E
2. Provide staff in all engineering disciplines (Electrical, Mechanical, Civil/Structural and I&C)
3. Provide supervisory and management staff to manage the design agency function
4. Provide Project managers to manage assigned projects and to maintain oversight over sub-tier engineering suppliers
5. Provide CAD and 3-D modeling expertise on-site to support the design agency function
6. Provide engineering administrative and document control related services

Specific Expertise Provided:

3. Multi-disciplined engineering, supervisory and management staff; active PE licenses
4. Executive leadership and sponsorship for program success

Size: 255,000 Manhours

Case Study: Staff and support construction of a large nuclear facility

Category: New Nuclear Build

Client: New Nuclear Facility under Construction

Solution:

1. Provide construction management services including Director of Construction, Construction Project Managers, Construction Supervisors and Construction Coordinators
2. Provide Field Engineering support (all disciplines)
3. Provide planning, scheduling and procurement resources
4. Provide construction safety management services
5. Manage the corrective action program for construction
6. Provide accounting and budget services for the Construction Department

Specific Expertise Provided:

5. Multi-disciplined supervisory and management staff in construction and engineering
6. Senior management sponsorship for program success

Size: 230,000 Manhours

Case Study: Develop and Implement Programs

Category: Existing Plant Services/New Build

Client: Various Commercial and DOE Complex Nuclear Facilities

Solution:

1. Develop and implement the following programs:
 - a. Environmental Health and Safety
 - b. Corrective Action Program
 - c. Emergency Planning
 - d. Nuclear Training
 - e. Maintenance Programs
 - f. Configuration Management Program
 - g. Nuclear Procedures
 - h. Nuclear Criticality and Safety
 - i. Fire Protection
 - j. Material Control and Accountability

Specific Expertise Provided:

3. Seasoned industry expertise with diverse experience
4. Utilization of industry best practices

Size: 182,000 Manhours

Case Study 9: Perform Operational Readiness Reviews (ORRs)

Category: Existing Plant Services/New Build

Client: Various Commercial and DOE Complex Nuclear Facilities

Solution:

1. Provide program management of the ORR Program
2. Perform management self assessments
3. Conduct ORRs and pre-ORRS in the following areas:
 - a. Environmental Health and Safety
 - b. Integrated Safety Analysis
 - c. Maintenance Programs
 - d. Operations
 - e. Nuclear Criticality and Safety
 - f. Fire Protection
 - g. Material Control and Accountability
 - h. Nuclear Training

Specific Expertise Provided:

1. Senior individuals with past ORR experience and Q/L Clearances
2. Individuals with ORR Team Member and ORR Team Leader certifications

Size: 128,000 Manhours