



## Safety Analysis Support Services

**Overview** Whether regulated by the Occupational Safety and Health Administration (OSHA), the Department of Energy (DOE), the Nuclear Regulatory Commission (NRC), or others, navigating the maze of ever-changing regulations, orders, and standards dealing with safety management is an arduous task. Compliance with these regulations in a cost-effective manner is a challenge, and will continue to be challenging as the competition for funding increases in a shrinking budget environment.

- Jason Associates Corporation (Jason) safety management staff provides cost-effective solutions to safety issues and concerns, safety analysis and documentation, and operations and safety support.
- Jason's safety professionals are knowledgeable of the government regulations that guide the development of safety documentation, including DOE Order 5480.22, Technical Safety Requirements, and 5480.23, Nuclear Safety Analysis Reports.
- Jason staff has prepared safety analysis reports (SARs) for many types of new, modified, and existing facilities including spent nuclear fuel storage facilities, nuclear material reactors and processing facilities, waste management facilities, environmental remediation activities, and commercial nuclear power stations.

**Understanding the Issues** A properly balanced approach to safety management that achieves compliance with regulations yet is cost-effective requires the development of various degrees of safety analysis and documentation. Cost-effective compliance is achieved by evaluation of potential hazards and consequences of failure by Jason professional experienced in safety management, operations, and systems engineering.



Jason staff can model and assess the effects of all types of accident consequences, including releases of hazardous, toxic, and radiological materials, fires and explosions, and nuclear criticality. When preparing a Safety Analysis Report (SAR), Jason staff document facility design and operation, develop accident scenarios, assess accident credibility, and assess potential accident consequences. Jason staff also analyzes the effects on both the on-site and off-site population and environment, and provide statistical analysis as applicable to safety related parameters.

*Jason professional staff has extensive experience in preparing safety analyses for all types of nuclear and non-nuclear facilities.*

From the results of these analyses, recommendations are formulated to assist in key aspects of facility management and operations, including the prudent selection of Technical Safety Requirements.

## **Corporate Capabilities**

Safety was a founding business area of Jason and continues to be one of Jason's primary business areas. Jason has extensive experience in preparing safety analyses for all types of nuclear and non-nuclear facilities. Jason staff includes engineers, scientists, safety specialists, industrial hygienists, health physicists, risk analysts, risk management specialists, and operations trainers who provide solutions to safety problems and issues. These safety professionals have prepared SARs for many types of new, modified, and existing facilities including spent nuclear fuel storage facilities, nuclear material reactors and processing facilities, waste management facilities, environmental remediation activities, and commercial nuclear power stations. These safety professionals have also modeled and assessed the effects of all types of accidents.

Jason's safety professionals have successfully produced the following specific types of documents and safety analyses:

- National Environmental Policy Act (NEPA)
- Safety Analysis Reports
- Safety Evaluation Reports
- Technical Safety Requirements
- Preliminary Hazards Analyses
- Environmental Impact Statements
- Unreviewed Safety Question Determinations
- Bases for Interim Operation
- Probabilistic Risk Assessments
- Failure Modes and Effects Analyses
- Hazards and Operability Analyses
- Fault Tree/Event Tree Analyses
- Fire and Explosion Modeling
- Criticality Safety Analyses

## **Experience**

Over the past decade, Jason has provided more than \$10 million in safety services to the DOE and large government contractors nationwide, including:

- Performing accident analysis for numerous environmental impact statements in accordance with the National Environmental Policy Act, including the Yucca Mountain EIS, for which Jason performed multi-variable stochastic analysis to compute the statistical distribution of drinking water (and food pathway) dose to humans that could result from disposal of spent nuclear fuel and high-level waste in Yucca Mountain;
- Developing NRC licenses for remediation and operations;
- Developing Technical Safety Requirements for non-reactor nuclear facilities in the DOE complex;

- Preparing SARs for waste management facilities;
- Writing the second edition of the Management Oversight and Risk Tree (MORT) Safety Assurance Systems text for the publishing firm of Marcel Dekker;
- Serving as a lead assessor for industrial hygiene, fire protection, and industrial safety at the Idaho National Engineering and Environmental Laboratory;
- Serving as a lead contractor providing safety analysis support at the Hanford Site;
- Conducting technical safety appraisals for nuclear facilities nationwide; and,
- Assisting nationally known industrial firms in complying with the requirements for systematic management of industrial safety issues, per 29 CFR 1910.119.

Jason's safety professionals have also developed customized health physics, emergency preparedness, and radiation-safety programs. Jason offers expertise in general safety assessments including work permit programs, accident prevention, and fire protection; OSHA record-keeping review; safety manual development; and safety program development, training, and evaluations.

### **Selecting Jason Associates Corporation**

As a company and since its inception, one of Jason's specialty areas has been providing analysis and expertise to establish the safe operating envelope of a facility or site. This includes the documentation required for a SAR and for compliance with other environmental regulations including the National Environmental Policy Act. Jason also provides comprehensive environmental risk assessments with emphases on site characterizations, regulatory and site management profiles, descriptions of land-use practices, hazard identification, exposure assessments, and environmental risk identification.

Jason has extensive experience in preparing safety analyses for all types of nuclear and non-nuclear facilities. Our staff members have prepared SARs for many types of new, modified, and existing facilities including spent nuclear fuel storage facilities, nuclear material reactors and processing facilities, waste management facilities, environmental remediation activities, and commercial nuclear power stations.

### **Contacts**

For more information about Jason's Safety Analysis Support Services, please contact Ernest Harr (eharr@jason.com) or Martin Letourneau (mletourneau@jason.com) or call (702) 251-8055, extension 208 or 217, with any questions you may have about Jason or our capabilities.

## Jason safety- and accident-analysis experience

Project Title	Regulatory Analysis	Accident Analysis	Consequence Analysis	Mitigation Measures	Probabilistic Risk Assessments
Safety Analysis & Regulatory Support for the Hanford High Level Waste Tanks	✓	✓	✓	✓	✓
Yucca Mountain Environmental Impact Statement	✓	✓	✓	✓	✓
Building 603 SAR Update (INEEL)	✓	✓	✓	✓	✓
Pit 9 Remediation Process Safety Analysis Report	✓	✓	✓	✓	✓
Support for Interim SAR Responses on Waste Management Facilities at INEL	✓	✓	✓	✓	✓
SAR Support to the Pu Processing Facilities at Rocky Flats	✓	✓	✓	✓	✓
Safety Analysis for the INEL Specific Manufacturing Capability	✓	✓	✓	✓	✓
Nevada Test Site Radioactive and Hazardous Waste Management Site SARs	✓	✓	✓	✓	✓
FSAR for the RWMC/SWEPP facilities (INEEL)	✓	✓	✓	✓	✓
Idaho Chemical Processing Plant SAR Support	✓	✓	✓	✓	✓
Safety Analysis Report for Protection Technology Idaho Flight Operations	✓	✓	✓	✓	✓
Probabilistic Risk Assessment at the Idaho Chemical Processing Plant (INEEL)	✓	✓	✓	✓	✓
Rocky Flats Technical Support for Nuclear Safety Group	✓	✓		✓	
Technical Advisory Group for Resumption Support of Pu Operations at Rocky Flats	✓	✓		✓	
DOE Idaho 5480 ER&WM Implementation Guidance	✓				
INEEL ERP Interim Guidelines for Nuclear SARs and TSRs	✓				
Technical Support for the Safety Analysis/ Risk Analysis Group at the Savannah River Site	✓	✓	✓	✓	✓
SAR Upgrade Support for the Irradiated Fuel Storage Facility	✓	✓		✓	
SAR Upgrade Support for RWMC/SWEPP Facilities	✓	✓		✓	
Independent Review and SER Preparation Services to DOE-ID	✓				