



Facility Startup and Readiness Support Services After Natural Disasters

In the aftermath of natural disasters such as the recent hurricane and subsequent floods affecting the Gulf Coast Region, it is important to be extra vigilant in adhering to process safety principles when starting up oil, gas and chemical facility systems.

To help ensure a safe and efficient return to normal operations, and using many of the lessons gained since 2005 from Hurricane Katrina, ABS Group provides a broad range of services, from risk/damage assessment to onsite staff augmentation. Should an incident occur, we also provide 24/7 incident investigation/root cause analysis support.

Key technical and reliability services we can provide during this critical phase of recovery/pre-startup operations include:

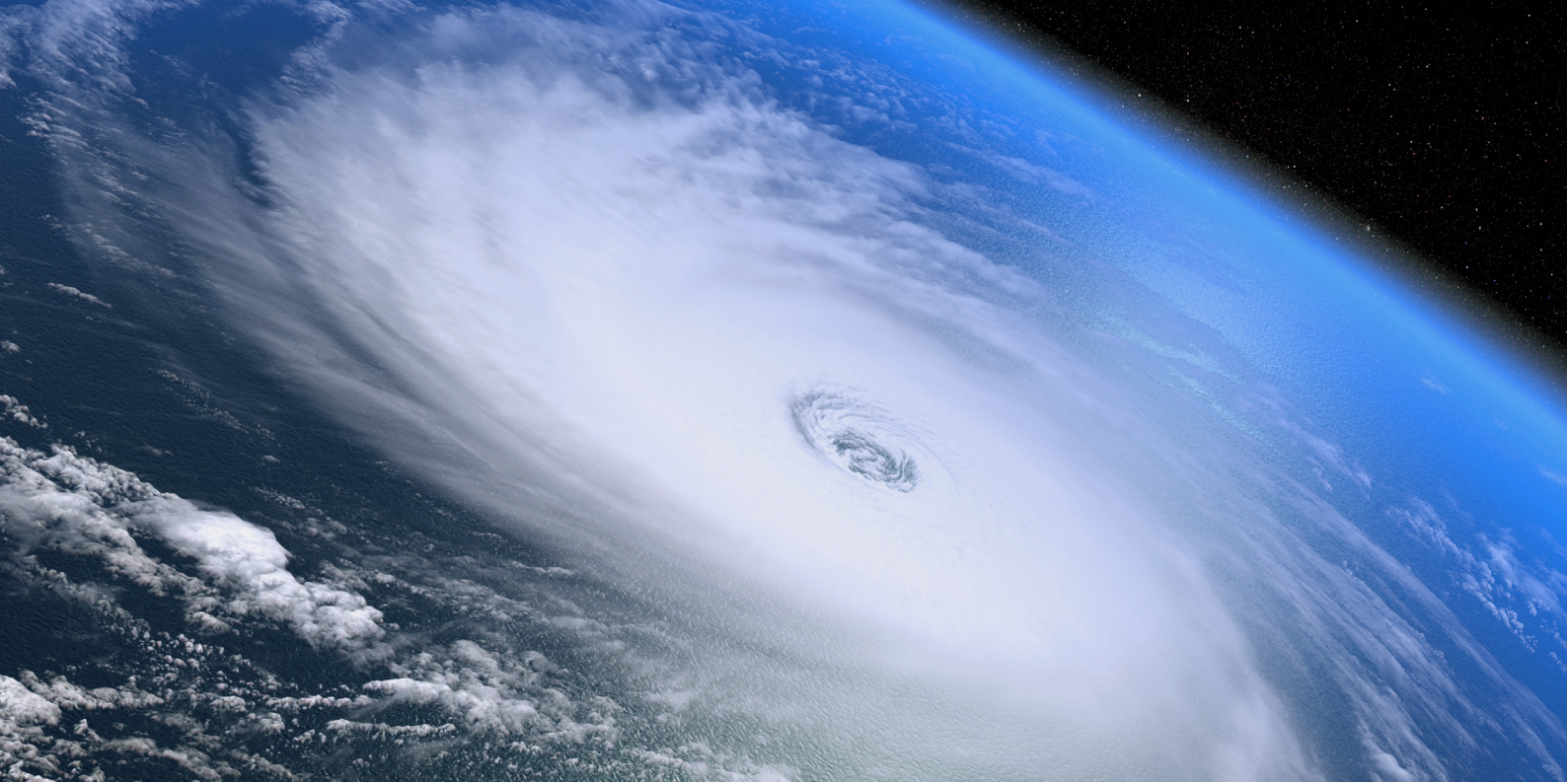
Mini-Hazard/Operational Readiness Reviews Focused on Potential Flood and/or Wind Damage

ABS Group can facilitate hazard and operational readiness reviews of critical process and support systems with a focus on identifying unique issues and hazards from potential water and/or wind damage. These reviews are customized to identify site-specific potential hazards and include topics such as:

- Floodwater leakage into equipment
- Foundation washout/damage
- Drainage obstruction/washout
- Insulation damage/water intrusion
- Equipment/piping displacement or impact damage
- Electrical grounding integrity
- Building damage/integrity
- Utilities damage, including backup systems/batteries/etc.
- Safety system damage/integrity
- Electrical/instrumentation/control system water intrusion/damage

Pre-Startup Review (PSSR) Checklist Preparation and Implementation

In addition to normal PSSR checklists that many companies use, we can help develop and incorporate additional topics/questions focused on verifying the integrity of plant equipment and support/utility systems based on potential water and/or wind damage that may have occurred during and after a natural disaster. These questions/topics incorporate, as applicable, items from (1) industry-specific checklists, (2) “what-if” brainstorming of pertinent plant-specific issues/systems, (3) the PSSR checklists included in *Guidelines for Pre-Startup Safety Reviews* (CCPS, 2007) and (4) a number of other detailed PSSR checklists that ABS Group either developed or has access to related to specific equipment/systems. These reviews help confirm:



- Repaired equipment/systems are in accordance with design specifications
- Safety, operating, maintenance and emergency procedures (especially focused on startup) are in place and adequate
- Recommendations from any mini-hazard analyses or readiness reviews have been resolved or implemented before startup
- Modifications (if any) since the shutdown have been reviewed under management of change (MOC) program, and any recommendations from those reviews have been resolved
- Appropriate training regarding modifications/repairs has been completed
- Quality assurance/quality control documents and records of inspections have been performed
- Additional information pertinent to the startup and operation of the idle system is verified
- Organizational change reviews occur while the degraded process safety support infrastructure conditions exist

Staff Augmentation Services

ABS Group can provide highly experienced personnel to provide extra staffing/temporary resources that can be required during pre-startup recovery and normal startup operations. These personnel can provide a wide range of onsite services (including either short-term or long-term support) to help clients achieve various time-critical tasks to safely and expeditiously return to normal operations, including:

- Assisting with verifications, inspections, walk-downs, documentation, tracking, completing and/or identifying gaps/ making recommendations related to MOC activities or hazard reviews
- Assist in verifying and/or updating procedures and/or related training for safe startup
- Providing mechanical integrity/fitness for purpose inspections/testing
- Assisting with other MOC and/or pre-startup safety review activities as necessary
- Providing damage assessments and other similar process safety-related tasks/advice as requested, including for insurance filings

Learn more about our Natural Hazards Risk Management services: www.abs-group.com/What-We-Do/Advanced-Engineering/Natural-Hazards-Risk-Management/

Have questions or need assistance?

Phone: (865) 966-5232 - Facility Startup Support
(331) 303-2272 - 24/7 Incident Investigation/Root Cause Analysis



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