

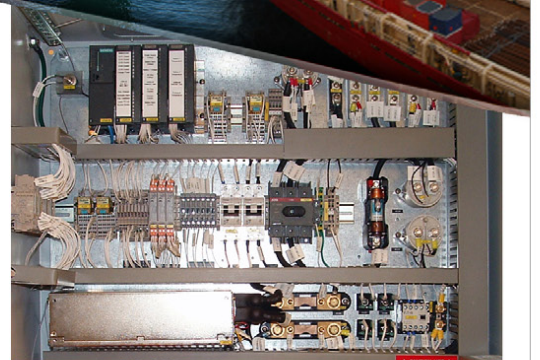
# CURRENT AND PAST PROJECTS



## UPS - Uninterruptible Power Supplies

Contract with Transocean - *Ongoing*

Aspin Kemp and Associates (AKA) has developed a highly reliable, fault-tolerant and cost effective UPS systems for providing mission critical control power. We have integrated our systems with thruster drives, drilling equipment, diesel engine controls/switchboards and Blow-Out Preventer (BOP) control systems. Our UPS features simultaneous AC and DC outputs. The UPS systems are available for a range of input voltages; single phase, three phase and DC. Both DC and AC outputs are available and the modular design inherently allows the matching of power, voltage and frequency ratings to project specific requirements.



## AGP - Advanced Generator Protection

Contract with Transocean - *Ongoing*

AKA has continued its deployment of the Advanced Generator Protection (AGP) system in the Transocean fleet. In addition to installations carried out as part of Transocean's recent new build program, several retrofit projects have been carried out on DP2 and DP3 class vessels where the plants have been upgraded to meet Transocean's Sixth Generation Power Plant requirements. The AGP system and Sixth Generation Power Plant provides a much more reliable power system by identifying diesel speed and generator voltages control faults and isolating these before they have a negative impact on the power plant.



## Hybrid Drillfloor

Contract with Transocean - *Ongoing*

AKA is working closely with Transocean on the development of their newest innovation, the Hybrid Drillfloor. This system will allow regenerative energy that is produced from the drawworks to be stored and then reused when the drawworks requires additional power for its process. The cyclical nature of the drawworks power requirements is an ideal application for hybrid technology. The efficiencies realized ensure that Transocean drilling platforms will have a significantly smaller environmental footprint than other operators using conventional systems will.



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[www.aka-group.com](http://www.aka-group.com) • [sales@aka-group.com](mailto:sales@aka-group.com)

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## IDS™ Documentation

**MV Salish and MV Kennewick - Washington State Ferries' Contract with Vigor Industrial Seattle Washington, USA, 2012**

Aspin Kemp & Associates (AKA) developed an Engineer's Operating Manual and a Vessel Systems Training Manual for each of Washington State Ferries' new class B, 64 car ferries built at the Vigor industrial shipyards in Seattle. The manuals were developed using AKA's IDS™ documentation system and provide comprehensive information for Chief Engineers and their staff on the vessel's power generation and distribution, alarm and monitoring, propulsion and control, and steering systems.

## Monitoring, Control and UPS System Installation in Challenging Environments

**Deepwater Millennium - DP2 Class Drillship Contract with Transocean Rio de Janeiro, 2009**

AKA has been contracted by Transocean to provide the AKA AGP system, AKA's InnoVision Supervisory PLC and HMI, Redundant Power Supply and Monitoring System, deviceTRAK and IDS™

documentation package for the vessel's power system. Brazil poses special challenges as a work environment or the AGP upgrade, but AKA's extensive work experience in the region, plus well-developed

expertise in AGP upgrades, is expected to keep schedule and cost risks at bay.

## Monitoring, Control and UPS Systems, deviceTRAK and Project Management

**Sedco 702 and Sedco S706 - Transocean DP2 Class Semi-submersible Contract with Siemens Oil and Gas Singapore, Winter 2007 - Fall 2008**

AKA was subcontracted by Siemens Oil & Gas to provide the AKA's AGP system, AKA's InnoVision Supervisory PLC and HMI, Redundant Power Supply and Monitoring System, deviceTRAK and AKA's IDS™ documentation package for the entire rig power system, propulsion drives and drilling SCR system. AKA provided a completely new speed control application for the Woodward 2301D HW based on the now mature design of the AGP and the SWBD controls. AKA was a key player in the concept development and engineering of Transocean's new propulsion system and high reliability power plant design for this class of vessel. AKA provided services to develop and execute an extensive test plan of the vessel MV SWBD at the factory. AKA was contracted to provide installation and commissioning services for the power and propulsion system, as well as provide the on site management of this activity.

## Training

**Western Nuclear Waste Management Facility Contract with Ontario Power Generation (OPG) Port Elgin, Canada, 2008**

AKA developed and provided training material and technical training to OPG personnel on the vacuum drying, helium backfilling and leak detection processes for the Dry Storage Container (DSC) in a formal classroom setting. Training materials were developed using AKA's IDS™ documentation system. The training included aspects of operation,

maintenance and troubleshooting aimed at operators, maintainers, control technicians and system engineers.

## Automation and Control Systems

**JOIDES Resolution - Transocean Ocean Drilling Vessel Contract with Siemens Oil and Gas Summer 2007**

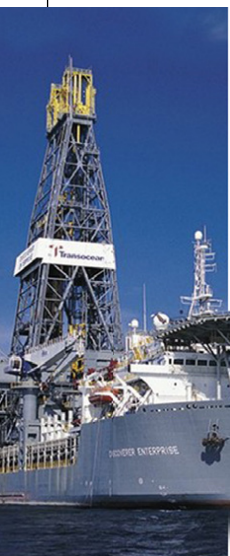
AKA was sub-contracted to provide a technical overview of the throttle control system for the Joides Resolution as well as install and commission the upgrade. The automation component of the system utilizes Siemens S7 300 and 400 hardware.



## SWBD Monitoring, Control and UPS Systems

**Discoverer 534 - Transocean DP2 Class Drill Ship Contract with Transocean Singapore, Spring 2007**

AKA completely changed out and upgraded the control section of the MV SWBD including the addition of the AGP system, AKA's InnoVision Supervisory PLC and HMI, upgraded speed control application and expanded protection relay functions (including Quik Trip). In addition to AGP, AKA also provided a 110VDC redundant power supply and monitoring system. AKA also delivered new diesel controls for the existing EMD diesels, a BOP Monitoring System, several other subsea control upgrades as well as a BOP Redundant UPS. AKA resources managed and executed all associated work.



**HEADQUARTERS**  
23 Brook Street  
Montague  
Prince Edward Island  
Canada C0A 1R0

**AKA WORLD OFFICES**  
North America - Canada  
EU - Bulgaria  
Asia - Singapore, China

**SALES**  
+1.902.620.4882  
sales@aka-group.com  
info@aka-group.com  
[www.aka-group.com](http://www.aka-group.com)