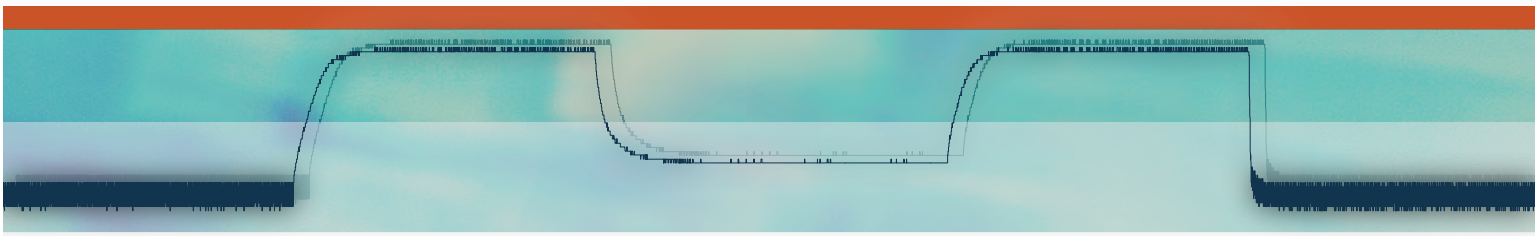
INNOVATING NUCLEAR TECHNOLOGY
ANALYSIS AND MEASUREMENT SERVICES CORPORATION

DC HOLD TESTING

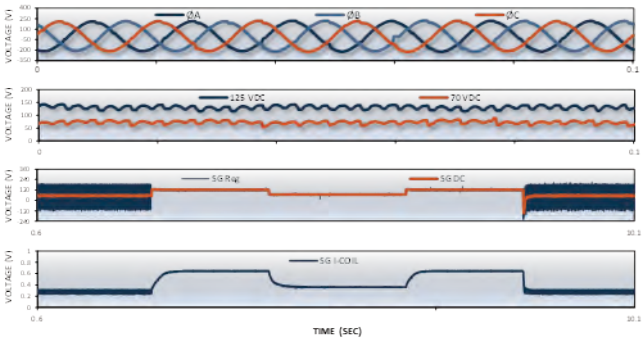
For Control Rod Drive Mechanism (CRDM) Systems



About

The DC Hold tests are based on monitoring the stationary gripper voltage and current of a group of control and/or shutdown rods as they are switched from the regulated stationary gripper voltage to the DC Hold voltage. Voltage signals are sampled for each rod and analyzed to ensure that the DC Hold circuitry is operating properly and has the expected signal levels. DC Hold testing from AMS may also be performed in conjunction with other AMS CRDM testing.

Example DC Hold Test Traces



DC Hold Voltage Level Report

Line-to-Line Voltage (Volts)		Line-to-Neutral Voltage (Volts)	
ØAB	260.82	ØA	151.15
ØAC	262.14	ØB	150.45
ØBC	260.45	ØC	150.74

Cabinet	Group	Latch (Volts) Power Cabinet	DC Hold Cabinet	Difference	Group Difference	Hold (Volts) Power Cabinet	DC Hold Cabinet	Difference	Group Difference
1AC	A	123.40	129.00	5.60	0.27	66.69	71.85	2.80	0.34
	B	123.53		5.47		66.65		3.20	
	C	123.67		5.33		68.80		3.05	
2AC	A	122.95	129.13	6.18	0.17	68.22	71.89	3.67	0.42
	B	122.84		6.29		67.80		4.09	
	C	122.78		6.35		68.20		3.69	
1BD	A	*125.357*	129.12	3.77	3.67	69.54	71.88	2.34	1.82
	B	122.23		6.89		67.72		4.16	
	C	122.83		6.49		68.13		3.75	
2BD	A	126.83	129.92	3.99	4.67	69.97	72.12	2.15	2.15
	B	121.26		8.66		67.83		4.29	
	C	122.91		7.01		68.54		3.58	
SCD	A	123.37	129.16	5.78	0.46	68.78	71.88	3.10	0.62
	B	122.91		6.25		68.16		3.72	

Benefits

Plant Benefits

- Recover Outage Time
- Less Wear on Coils at High Current
- Additional Diagnostics for Stationary Coil Resistance and Current Step Time Constant
- Decrease Troubleshooting Time
- Identify Performance Degradation
- Monitor System Reliability

Equipment Benefits

- Connect to All Rods at One Time
- Collect Data in as Little as 15 Minutes
- Portable, Lightweight, Quick Hookup

Software Benefits

- Voltage Transitions Identified Automatically
- Monitor Coil Current and DC Hold Outputs
- Quick Reporting Flags Any Anomalies
- Data Trended from Cycle to Cycle

AMS CRDM Test System

For more information please contact:

Dan Beverly (Chief Technical Officer)
Extension: 112 **Email:** dan@ams-corp.com

Darrell W. Mitchell (Technical Services Manager)
Extension: 108 **Email:** darrell@ams-corp.com

Analysis and Measurement Services Corporation

AMS Technology Center
9119 Cross Park Drive
Knoxville, TN 37923, USA

TEL 865 691 1756
FAX 865 691 9344

EMAIL info@ams-corp.com
WEB www.ams-corp.com

10CFR50 Appendix B Program