

## MRV Communications Out of Band Networking Solutions

### NERC CIP Cyber Security Standards Support

#### *History*

In the past the Bulk Power System industry has been self regulated in regards to security and in particular electronic security. Individual organizations determined their level of compliance to published standards and procedures. While many companies met the requirements, many did not and with no overseeing authority there were no repercussions such as fines or sanctions for not adhering to the standards. The downside of this system has been seen in many major blackout events as well as the increasing concern over potential terrorist attacks.

#### *Current Status*

In 2005 Federal legislation allowed The Federal Energy Regulatory Commission (FERC) to enforce fines up to \$1,000,000 per day and also provide the power to sanction companies from operating in the marketplace. The North American Electricity Reliability Corp (NERC) has been designated as the Electric Reliability Organization (ERO) which will develop reliability standards to meet FERC Cyber Security Standards in the US. These standards are known as the Critical Infrastructure Protection or CIP standards. The standards are comprised of nine sections commonly known as CIP001-CIP009. In addition to the current CIP standards, considerations are being taken to reference NIST 800-53 standards as they relate to CIP003-CIP009 to further enhance and detail security requirements. The National Institute of Standards for Technology (NIST) is the organization that oversees security standards for federal systems and oversees the FIPS security standards.

#### *Implementation Schedule*

Most utilities will be required to implement the majority of the requirements defined by NERC CIP by June 2008. Enforcement of the CIP Cyber Security Standards will be accomplished via audits which will begin in Q2, 2009.

#### *Solutions*

MRV Communications' Out of Band Networking product family features a number of devices that are commonly deployed throughout the utility industry. The product family includes Console Servers, Power Management and Sensor Networking platforms. The LX Series Console Servers were the first console servers in the industry to receive FIPS 140-2 certification. FIPS certification is required by many agencies throughout many branches of the federal government. Strong encryption, secure transport and user tracking are all critical components



Connectivity Unlimited™

accessed and certified under these standards. This certification provides a solid foundation for meeting the emerging NERC CIP Cyber Security Standards throughout the LX Series product family.

The following table provide information regarding the support for CIP standards by the LX Series Out of Band Networking product family:

Standard #	NERC CIP Category	Feature
CIP-004 CIP-005 CIP-007	User Access and Passwords  Employee termination / User rights revocation	<ul style="list-style-type: none"> <li>• Multiple Subscriber accounts and passwords</li> <li>• Strong password support</li> <li>• IPSEC, SSHV2, SSL Encryption</li> </ul>
CIP-003 CIP-005	Access Control Management	<ul style="list-style-type: none"> <li>• Default Port Configuration</li> <li>• Individual administrative accounts and passwords separate from individual user accounts and passwords</li> <li>• Local and remote logging of user access and command execution</li> </ul>
CIP-005 CIP-007	Electronic Security Perimeter and Dial Up Security	<ul style="list-style-type: none"> <li>• Internal Modem Option</li> <li>• Modem Access Privileges tied to subscriber login</li> <li>• Dial back support</li> <li>• Individual Port and Subscriber Banner Messages</li> <li>• Electronic access monitoring and logging</li> </ul>
CIP-003 CIP-004 CIP-005 CIP-007 CIP-008	Logs, Reports and Audit Resources	<ul style="list-style-type: none"> <li>• Detailed access logs with user, port and connection information</li> <li>• Internal and External Syslog NG support</li> <li>• Per Port Buffering</li> </ul>
CIP-007	Alerts and Notifications	<ul style="list-style-type: none"> <li>• Configurable system alert email, SNMP, Syslog messages based on network, physical and environmental conditions</li> </ul>

MRV (West Coast)  
20415 Nordhoff St.  
Chatsworth, CA 91311  
800-338-5316  
818-773-0900

MRV (East Coast)  
295 Foster Street  
Littleton, MA 01460  
800-338-5316  
978-952-4700