

Emerging Issue #RAS-1: *Environmental Regulations*

Emerging Issue	Item	Specifics
Horizon	Number of years	Within 2 to 10 Years
Status	Emerging or Standing	Standing
	Technical Group	Reliability Assessment Subcommittee (RAS)
Background	Description	<p>In the United States, several regulations are in the process of being proposed by the U.S. Environmental Protection Agency (EPA) that directly affects the electric industry. Depending on the outcome of any or all of these potential regulations, the results could accelerate the retirement of a significant number of fossil-fired power plants. EPA is currently developing rules that would mandate existing power suppliers to either retrofit environmental controls at existing generating plants or retire them. The most significant proposed EPA rules have been in development for over ten years and are currently undergoing court-ordered revisions that must be implemented within mandatory timeframes.</p> <p>This emerging issue section is will be a follow-on/updated assessment of the 2010 NERC Special Reliability Assessment and the 2011 Long-Term Reliability Assessment’s update section.</p>
	What changes during the 10-year horizon?	<ul style="list-style-type: none"> • Potential loss of significant amounts of generation • Unit outages for maintenance due to retrofits • Acceleration of new unit construction
	What is the impact to regional reliability?	<ul style="list-style-type: none"> • A significant amount of generation retirements and de-rates associated with environmental controls may severely impact reserve margins if replacement resources cannot be built or acquired by proposed deadlines. • Potential loss of a significant amount of generation, either through retirements or de-rates associated with environmental controls equipment, during a short time frame (2014-2015) • Unit outages for maintenance due to retrofits <ul style="list-style-type: none"> ○ Capability to retrofit existing plants to meet required emission targets ○ Ability for industry to coordinate the necessary outages in order to perform the retrofit • Load pocket areas (i.e., major metropolitan areas) may be impacted by the loss of “critical” bulk power resources. • Off-peak vulnerabilities when units are out of service for maintenance

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Assessment Factors	Resource Adequacy Considerations [Yes/No]?	Yes. Early retirement of multiple units in the short-run can stress the bulk power system if plans are not in place to add resources. This can affect both short- and long-term planning strategies and reduce Planning Reserve Margins. Sufficient Planning Reserve Margins must be maintained to provide reliable electric service. With fewer resources, flexibility is reduced and the risk of a capacity shortage may increase, unless additional resources are available. Where Planning Reserve Margins fall below targets or requirements, resources in a specific area may not be sufficient to meet future demands.
	Transmission Adequacy Considerations [Yes/No]?	Yes. As replacement generation is constructed, new transmission may be needed to interconnect new generation. Additionally, existing generation that may not be deliverable due to transmission limitations. Enhancements may be needed to the transmission system in order to support firm and reliable transmission service to support potentially new generation dispatch patterns. Transmission system enhancements and reconfiguration may be necessary in some areas, which create additional timing issues as new transmission facilities take relatively longer to construct than generation. Second tier effects include impacts to system stability, short-circuit, and deliverability.
	Resource Siting Impacts [Yes/No]?	Yes. Additional generation siting may be necessary to support the construction of new replacement generation. In some cases, existing sites will be used for replacement generation—for others, new sites will have to be developed. Each situation will have unique characteristics that determine how long the permitting process may actually last. This is of particular importance to the resource assessment due to the constricted compliance timelines associated with the potential rules.
	Operations Impacts [Yes/No]?	Yes. Along with other drivers, potential environmental regulations can change the overall fuel-mix, ultimately changing the inherent operating characteristics of a given resource portfolio. For example, with less coal-fired capacity, more gas-fired generation may need to provide base-load services. As a result, the interdependency of gas and electric supply, transport, and delivery must be further assessed to ensure reliability is not degraded.
	Remaining Uncertainties	<ul style="list-style-type: none"> • EPA waiver and exceptions used to keep generators online to maintain reliability • Finalization of coal combustion residual and cooling water rules (mid-2012) • Retirement announcements • Transmission retrofits to accommodate new resources