

# **Risk Mitigation and SCR/SNCR: Compatible or Mutually Exclusive?**

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## **Summary**

The issues of risk mitigation as applied to any technology (including SCR and SNCR) involve an analysis of:

- the application in the specific industry
- utilization history
- component and process assessment
- peripheral effects
- frequency and severity assessments for losses
- the “foreseeability” of loss scenarios
- track record of the technology in other industries

The insurance industry operates largely under the law of large numbers: it attempts to gather a large enough spread of risk (geographically and otherwise) in industries such that the premium load will allow them to absorb unforeseen losses without having their entire portfolio compromised by an event affecting a specific industry or geographical area. To accomplish this, the industry typically takes a “no unproven or experimental” technology approach regarding the acceptability of risk.

With SCR and SNCR, the application of the technology in power plants is comparatively new. As such, the insurance industry seeks to determine:

- how many applications have been installed
- where these were installed
- what the experience has been from an operating and loss perspective
- what are the other possible effects that the application of this technology might be to the balance of plant equipment
- does this technology present the potential of non physical damage loss from its utilization

In other words, is SCR/SNCR capable of being modeled into a frequency and severity analysis and has the technology been sufficiently employed such that the experience allows one to confidently expect fortuitous events?

For SCR and SNCR, there have been sufficient installations to assess part of the questions above, and other issues that are simply incapable of being determined at this point.

The application is designed solely for environmental enhancement rather than process optimization. The insurance industry looks to see if there may be an unintended consequence to SCR/SNCR utilization: does application affect downstream characteristics such that it creates a harsher environment for equipment and material than originally designed? If so, does this increase the potential for a loss due to premature failure?

Another area reviewed by the industry is the potential effect the technology has on other insurance coverage, such as liability. In the case of SCR/SNCR, the obvious issue here is with the handling and control of ammonia. An accidental release of ammonia, while not likely creating a physical damage loss to equipment, nevertheless can be a catastrophic exposure from a liability perspective. The potential for injury or death to workers or those in close proximity to such a plant must be assessed.

In such an assessment, it is likely that the review will include an assessment of the operating, safety and emergency procedures that the plant has developed in regards to ammonia. Also perhaps unknown are the long-term health implications to those operating for extended periods with the ammonia or urea. Similarly, does ash with a residual ammonia content constitute a risk to 3<sup>rd</sup> parties that is covered under the policy?

Finally, we need to determine the risk mitigation potential for SCR/SNCR in the face of defined exposures to answer conclusively whether SCR/SNCR is compatible or mutually exclusive to the mitigation of the defined risks or loss events. For this assessment, the answer lies not only in the technical understanding of the risks present, the potential long term consequences, the loss scenarios for broader exposure coverage and the downstream effects of the utilization of the technology, but also in the management and human element conditions present at the facilities involved.

An analysis of these areas is the only way to conclusively answer the premise of this presentation. The answer in short is that they are not mutually exclusive, but can be rendered adverse in the risk selection process without the full understanding and complete disclosure of the foregoing information.