



WORLD INSTITUTE FOR  
NUCLEAR SECURITY

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**Time for an Integrated Approach  
to Nuclear Risk Management, Governance and  
Safety/Security/Emergency Arrangements**

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# **TIME FOR AN INTEGRATED<sup>1</sup> APPROACH TO NUCLEAR RISK MANAGEMENT, GOVERNANCE AND SAFETY/SECURITY/EMERGENCY ARRANGEMENTS**

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The World Institute for Nuclear Security (WINS) hosted a one-day roundtable discussion focused on the early lessons emerging from the Fukushima tragedy that took place in Japan in March 2011. The roundtable, which was co-hosted by Serco, was held in London on the 12th May at the Royal United Services Institute for Defence and Security Studies (RUSI).

It will clearly take months, if not years, before detailed analysis of the incident is complete and all lessons from it have been identified. However, the incident has already prompted safety reviews for organisations in the international nuclear community. One thing is clear: All reviews by the nuclear industry, governments and international community must include the lessons that are emerging for nuclear safety AND security and emergency arrangements. WINS believes that all major events, whether driven by natural or malicious causes, should be used as catalysts for review and as learning opportunities that will help us improve current arrangements. This is because safety and security are intimately linked and serve a common objective: the protection of the public and the environment.

This paper sets out the priorities for nuclear security; we offer it as a contribution to the international debate on what needs to change to improve the management and oversight of nuclear operations.

## **INTEGRATING NUCLEAR SAFETY, SECURITY AND EMERGENCY ARRANGEMENTS**

Safety and security have traditionally been regulated and managed in isolation from each other. Safety management has been the responsibility of operators, engineers, safety managers and scientists, whereas security tends to be the responsibility of a separate function frequently led by ex-military and police personnel with a different professional background and range of competencies. Similarly, regulators for safety and security have traditionally been located in separate organisations.

This situation must change. The complex, interconnected nature of safety, security and emergency management requires convergence; without it, serious gaps in capability and response will persist. This is why security needs to be integrated into mainstream organisational management and development and why regulators of the two fields need to be integrated as well. It is neither efficient nor effective to consider nuclear safety cases, security vulnerability assessments, and financial

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1 An integrated management system is a management system that integrates all of an organisation's systems and processes into one complete framework, enabling an organisation to work as a single unit with unified objectives

and reputational risk separately. Crises are, like the world in which nuclear sites operate, increasingly complex, networked, dynamic and fast moving. For this reason, assessing, mitigating and managing risk is a challenging task that cannot be done in isolation. Emergency planning and response must be fully integrated into both safety and security arrangements. Doing so requires the adoption of an all hazards approach that concentrates on what needs to be done before and during a crisis. It also requires an integrated response that covers emergency arrangements and a proactive, trustworthy, empowered crisis communication mechanism that understands both safety and security.

WINS strongly believes that nuclear safety and security management must be considered throughout the lifetime of the facility, which begins with the facility design and continues through commissioning, operation and decommissioning.

### **A COMMON ASSESSMENT OF RISK AND SHARED NUCLEAR LIABILITY**

Boards and their organisations need to recognise that liability for nuclear safety and security invariably rests with them, whether or not they are subject to effective regulation or their regulator has adequately assessed the threat. Boards also need to recognise that their liability and insurance arrangements are influenced by their approach to risk management, risk appetite, profit versus risk attitude, and the overall reputation of their organisation for such matters. Furthermore, their liability is not constrained to nuclear-related legislation; organisations are increasingly being prosecuted for criminal liability when there is evidence of wilful misconduct.

However, whilst it seems reasonable for nuclear operators to be responsible for on-site nuclear safety, liability for nuclear security is less straightforward because operators do not have direct control over all of the factors that affect it. Examples include a State's foreign and domestic security policy, the effectiveness of a State's border controls, and the competence of national threat assessments and responses.

Because of this, it seems reasonable that the State-defined design basis threat for security should hold the operator legally bound to protect against a specific set of threats but with the State legally bound to protect against and be accountable for beyond design basis threats. Such shared arrangements should be reflected in the associated insurance and liability arrangements. Furthermore, nuclear insurers should use adjustments in counter-terrorist insurance pricing for implementing risk mitigation measures as determined by independent oversight organisations, just as safety performance is linked to insurance pricing in some areas of the world. This area is under studied and needs reform.

## **IMPROVED CORPORATE GOVERNANCE**

Because cultural behaviour in any organisation is driven from the top down, it is critical that the Board and senior executives lead their facility's nuclear security culture by example. No-one can guarantee whether or not a terrorist attack will occur; if one should take place, Boards must be able to demonstrate that they have taken all reasonable steps to prepare for and respond to such an event. This is also true in the case of external events that cause physical damage to a facility, such as civil unrest and natural disasters like earthquakes, tsunamis and floods.

Implementing an integrated approach to risk management requires that Boards put in place the same effective oversight arrangements for nuclear security that they have already put in place for the performance and compliance of safety, finances and the environment. Because the Board has ultimate legal responsibility for risk oversight and compliance, they would be well advised to approach risk management by considering the consequences that could occur if an event were to happen rather than the likelihood of it happening. Boards should publish their security oversight arrangements annually in their Corporate Social Responsibility Reports.

## **PEER REVIEW AND SHARING BEST PRACTICES – BUILDING CONFIDENCE**

After Three Mile Island and Chernobyl, the international community and nuclear operators established organisations and systems that enabled them to share best safety practice and conduct peer reviews. Further lessons and improvements to those systems will no doubt be identified following the events in Japan. Unfortunately, the international sharing of best security practices – and how to integrate them into mainstream nuclear operations – has lagged behind. One major reason for this is an unjustified belief that it is not possible to share best security practices because it would involve the exchange of classified information.

Given the importance of an integrated approach to nuclear safety, security and risk management, and the need to learn from international experience, such attitudes must now change. The nuclear industry and its regulators need to understand that it is possible to share best management practices relating to security while maintaining secrecy of site-specific arrangements. In fact it is not only possible but critical that they do so. It is also critical that such an approach be implemented internationally on a systematic basis.

Sensible goals for experience sharing at the international level include achieving interoperability in a crisis, conducting effective safety and security exercises, breaking down information silos, and achieving a collective shared view of risks and associated governance mechanisms.

## **EDUCATION AND TRAINING – BUILDING CAPACITY**

Nuclear security training is currently under resourced and overlooked. Any assessment of worldwide training and education programmes will elicit a stark contrast between safety and security. Nuclear safety training is widely available, well structured and accredited, and it is the norm for nuclear safety management to be demonstrably competent, experienced and well trained. The same framework and availability of training does not exist for security management.

One of the major challenges in this regard is that no internationally-recognised criteria have yet been developed for the accreditation and training of security personnel. The nuclear community needs to resolve this situation by formulating and implementing recognised standards and competence levels. Doing so will be the first stage in providing an international training regime that will encourage security managers to obtain the necessary skills and experience to integrate their activities into mainstream nuclear operations.

## **CONCLUSIONS**

Events in Japan have raised global, long-lasting challenges. This is a time of considerable uncertainty and risk—both reputational and financial—for the entire nuclear industry. Failure to shape the post-Fukushima environment in such a way that inspires confidence in the operation of existing facilities and the new construction of nuclear facilities presents a significant, long-term obstacle to the industry’s development. More of the same from the international community is not enough. Now is the time to seize the opportunity to introduce a collaborative regulatory and corporate governance framework that is robust enough to meet the increasingly complex, networked risk environment that we face.

The time has now come to integrate risk management and nuclear regulation, improve the corporate governance of security performance and encourage an “all hazards” approach as the industry norm. Peer review and the sharing of best security practices internationally should be encouraged and implemented in a structured and effective manner. The liability regime for nuclear security needs to be reviewed and the industry incentivised by the market based incentives to achieve demonstrably high performance and capability to respond to agreed security threats. States should take proper accountability for extreme, unforeseeable, events. The management and resources necessary to respond to complex crises need to be reviewed and exercised. Training and education for security management needs to be improved and accredited.