

Rethinking Surveillance in Response

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Abstract

Effective surveillance is critical for addressing the increasingly complex challenges of emergency response by enabling situational awareness and informed decision-making. Historically, surveillance efforts have been fragmented and reactive, lacking a systematic approach. To bridge this gap, IPIECA and the International Oil and Gas Producers (IOGP) facilitated workshops in Europe and the United States, engaging experienced responders to develop a structured surveillance framework. These efforts culminated in the *IPIECA Oil Spill Surveillance Planning Guidance*, a resource designed to enhance oil spill contingency planning and response management.

The workshops identified essential components for strategic surveillance, emphasizing scalability, coordination with Incident Management Teams (IMT), and adaptability to evolving scenarios. A six-step surveillance planning process was established: identifying information needs, defining resource requirements, managing resources, tasking, data handling, and communication. This process integrates with the “Planning P” incident management model, underscoring the role of a dedicated Surveillance Unit in improving overall response effectiveness.

Surveillance techniques and assets, including satellites, aerial observations, ground surveys, and autonomous underwater vehicles (AUVs), are tailored to the type and scale of incidents. Workshops conducted from 2017 to 2018 brought together industry responders, regulatory agencies, oil spill removal organizations (OSROs), and consultants. Using scenario-based exercises, participants defined situational awareness, documented a systematic methodology for strategic surveillance, and identified critical information needs and data management practices.

Findings highlighted the importance of organizing and coordinating surveillance activities during both preparedness and response phases. Practical tools, such as quick guides, job aids, and checklists, were developed to support the implementation of the six-step framework. Effective surveillance requires close IMT engagement, a forward-looking approach, and structured processes to adapt to incident dynamics.

To operationalize these steps, roles and responsibilities were categorized into five key areas: leadership, planning, data management, technical advice, and liaison functions. While small-scale responses may consolidate these responsibilities under a single individual, large-scale incidents demand a more structured approach, with distinct workstreams led by assigned personnel.

Proactive planning, efficient data management, and technical expertise are central to aligning surveillance activities with incident management system (IMS) cycles. By maintaining a strategic focus and adaptability, surveillance can support the dynamic needs of emergency response and ensure effective situational awareness across all phases of an incident. This structured approach redefines surveillance as a critical enabler of emergency response success.