

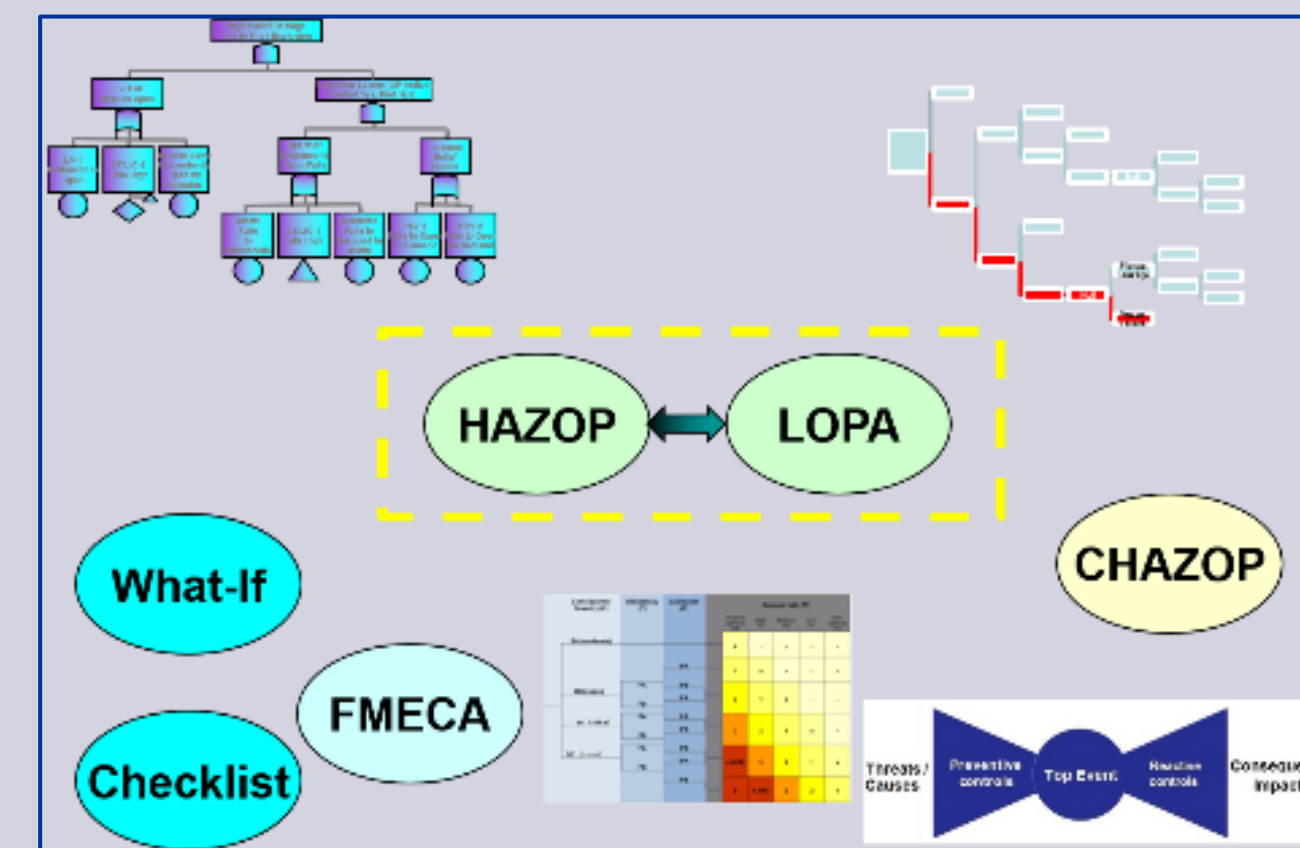


The way we were.

# Lessons-Learned from Remote-HAZOP/LOPA Applications

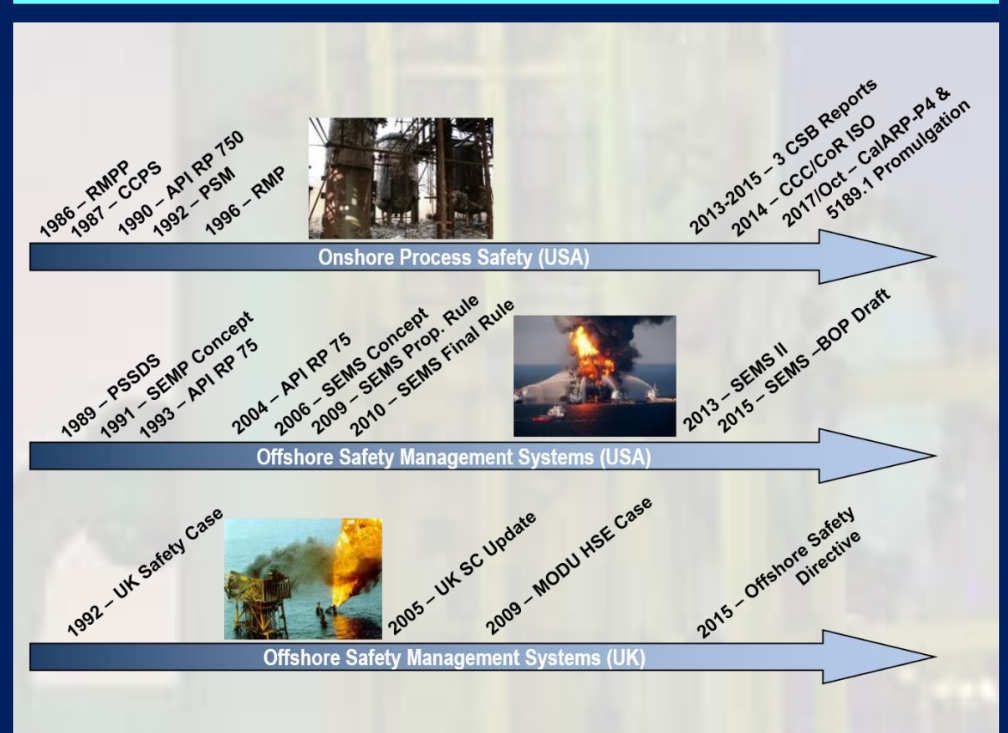
Steven T. Maher, PE CSP, Steve.Maher@RMPCorp.com

Risk Management Professionals ♦ [www.RMPCorp.com](http://www.RMPCorp.com) ♦ 949/282-0123



We still must get the job done!

## Regulatory & Project Implementation Changes Lead to Increased Telecollaboration Need



**Regulatory Challenges** – PHAs have become **more complex and quality has to be #1**, even if interactions may be more difficult if “social distancing” for the health of the PHA Team.

**Capital Projects are Changing**

- **Financial pressures** to accelerate project schedule
- Use of **Package Vendors** to accelerate project schedule and compartmentalize design work
- **More (and Geographically-Separated) Stakeholders** – Increased spreading of financial project risk over many companies
- **Financial pressures** to avoid re-work and start-up challenges

See [GCPS-2019 Paper](#) for additional HAZOP/LOPA quality tips.



See [Steve Maher Bio](#) for author background.

## Sensible Applications for Remote-HAZOP/LOPA

### Large Capital Projects

- **Geographically-separated individuals from multiple companies** participate in the PHA (**minimize cost/health impact**)
- **PHA is a Critical Path Item** (maintain regulatory/project schedules, avoid re-work or start-up challenges)
- **Periodic need for Involving Package Vendors and SMEs during the PHA**
- Many “Casual Observers” that can “listen in” with minimal impact on Core Team interaction

### Small Projects

- **Short-Duration PHAs** – Travel time/costs can be a **significant fraction** of the entire effort.
- Management of Change (MOC) Exercises
- **Rapid-turnaround** of results needed

### Other Remote-PHA Benefits

- **Facilitated Access to Part Time Members** for Immediate Information to Resolve Issues Quickly Rather than Utilizing the “Parking Lot” – Examples:
  - Outside Engineers/Operators to Address Interconnected Equipment Questions
  - Engage Subject Matter Experts (SMEs) for Guidance
- **Streamlined Team Alignment**
  - Facilitated Information (Screen) Sharing for All Participants
  - Whiteboard
  - Chat
  - File Transfer

Time-utilization of a Remote-HAZOP/LOPA Session can typically be as effective as in-person.

## Path-Forward for PHA Telecollaboration

- Remote-PHA Team Meetings require **extra planning and preparation**
  - **Equipment Checks, Software Checks, Pre-causing**
- **Remote-HAZOP/LOPA can:**
  - **accelerate capital projects**
  - **aid in project control**
  - **enhance teamwork**
  - **provide a safe environment** for team members
  - **result in tangible savings** to the Owner/Operator
- **Telecollaboration** should not become the standard for all PHAs, but for many important applications, the **advantages outweigh the disadvantages**
- Technological advances will continue to make telecollaboration even easier.
- Telecollaboration technologies and applications have already changed how we do business and will continue to be used post-COVID.



## Planning/Preparation Tips for the Remote-HAZOP/LOPA

### PHA Facilitator

- **Amplified Need for Critical Skills**
  - Technical Acuity
  - Team Engagement & Delegation
  - Judging & Facilitating Input
- Importance of Familiarity with Telecollaboration Software for Both Facilitator and Scribe
  - **Practice Before Team Session**

### Equipment

- Adequate/**Reliable**/Compatible Computers/Displays/Audio/Software
- Cameras (optional)
- May Need a Professional Microphone or Headset
- **Pre-arrange Communications Access and IT Support**
- Perform Operating System Updates In-Advance
- “Fresh” PC Reboot Before Sessions
- **Test – Test – Test**

### PHA Scribe

- **Quality Scribe Support is Essential** for Remote-HAZOP/LOPA
  - Familiarity with HAZOP/LOPA techniques & software
  - Familiarity with reading engineering drawings
  - Familiarity with the telecollaboration software
  - Robust understanding of the communications environment
- **Co-Location of Facilitator and Scribe is optimal.**
  - If not co-located, Facilitator knowledge of PHA software and direct command of the Scribe is more important.

### Technical Preparation

- **Pre-define and Communicate Causes**
  - Completeness
  - Team Readiness
  - Future Use – Level-of-Detail
  - Ability to Quickly Locate Equipment on P&ID During Session
  - Future Use – Grouping
  - Pre-define and Communicate Technical Questions to Support **Team Preparedness**