

# Capstone Exercise

Storyboard Scenario

# Scene 1 Regional Office



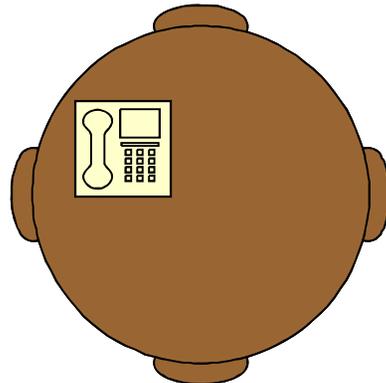
Setup: Div Director and Branch Chief in Regional office, on the phone with the inspectors

Division Director: "Alright folks, this is John, I've got Jay here with me. There was a problem last night at the Rocky Ford station. It seems they tried to drain their pressurizer."

BC: "Yea, this is Jay, it looks like they were starting to drain down the pressurizer from a solid condition, and level got away from them. We think it was due to a large drop in pressure after shutting off the last reactor coolant pump that caused the reference leg on the level instrument to void, and they lost actual indicated level."

Div Dir: "We are sending you out to Rocky Ford for a special inspection. Doug will be the team lead and will get you a copy of the charter and let you know what we're looking at."

BC: "Get your travel set up, I'll approve it when you bring it by. We'll talk about all of the types of inspections we do when you stop in. The senior resident will give you a full briefing when you get to the site tomorrow."



# Scene 2, SRI briefing the team

Set Up: RIO, SRI briefing the team on the event.

Team Lead: “We’re here to conduct a special inspection on the pressurizer level issue from yesterday. Can you give us a good rundown on what happened and what we know so far?”

SRI: “Well, first of all, welcome to Rocky Ford. Let me start at the beginning. The reactor was tripped yesterday in preparation for cooldown to begin the refueling outage. The plant entered cold shutdown a few hours later. The pressurizer was filled solid, and later in the day four hydrogen peroxide additions were made. The first three went into the reactor coolant system and the fourth directly into the pressurizer. They shutdown the last reactor coolant pump about 25 minutes after the last addition. When they shut off the pump, they saw pressure drop quickly from about 315 psig all the way down to 20 pounds. They figured out that the rapid drop in pressure, combined with a higher than normal dissolved gas concentration, caused the reference leg of the cold-calibrated pressurizer level instrument to partially void when those gasses started coming out of solution. That sent a portion of the water from the unsealed reference leg back into the pressurizer, and caused a false high reading. Because the operators were not monitoring this instrument, they didn’t realize that it was inaccurate.”

Team Lead: “So, they didn’t actually know what their level was when they started to drain.”

SRI: “That’s right. So yesterday when they started to drain the pressurizer from solid, the indicated level was 144%, and it took 43 minutes to get indicated level off of 144%, and another 42 minutes before it got down to 100% indicated. They drained for almost 2 hours, shooting for a level between 10 and 15 percent. They were surprised when level stabilized out at 80%. They stopped draining and started to increase the charging rate to increase the RCS inventory. The shift thought there was an instrument problem and generated a condition report. They tried to put the RCS sight glass in service, but that took about 4 hours due to a bubble forming in the sight glass. Ops got I&C Maintenance to restore the level instrument and were able to stabilize pressurizer level at 14%. They initiated a quick human performance investigation, but the Ops manager had them change that to a prompt investigation when he got in this morning.”

Team Lead: “Thanks for the briefing. I guess we better get started. (to insp. Team) Here’s our inspection team charter, What do you think we’re going to need to look at here team? And how are we going to get it done?”



# Scene 3, Entrance Meeting

Entrance meeting in conf. room with all players.

Team Lead: "I'll be the team leader for this special inspection. This is my team. We'll be working out of the resident inspector office. Now I'll let my team tell you what we are going to be looking at, and who we'll need to talk with."



# Scene 4, Interviewing the Operator

Set up: In the MCR, interviewing the operator

Operator: “Yes, we do have a procedure that describes watchstanding practices, it’s required by Tech Specs. It does require us to be continuously aware of all major plant parameters, use diverse information sources to verify status where possible, announce all main control room annunciators and alarms, and aggressively investigate annunciators to fully understand the reason for any alarm that comes in or clears. But, like I wrote in my statement, it seemed like it was taking a long time for the level to come down, but no one suspected a problem with the instrument, we had checked it before we started and it seemed alright. There was a lot going on and I guess I just didn’t notice that the pressurizer high level alarm or variable high level heaters on alarm had cleared or that the low pressurizer level alarm came in; nobody did! I wish we had, the actions in the annunciator procedure would have kept us from draining the RCS to the top of the reactor vessel hot leg.”



# Scene 5, CRS in MCR interview



Set up: back in MCR interviewing CRS

CRS: “You know, it’s funny you bring up that operating experience. We were aware of it, in fact we had an action to incorporate it into our procedures. But, you know what happened; engineering had the action and they signed it off as complete, but it never actually got implemented, and now, we have repeated the same mistake. We shouldn’t have missed the instrument error, but when you are busy and you expect your equipment to work correctly, sometimes its easy to miss this kind of thing. That’s why we took the action from the OE, so we wouldn’t screw this up. But, thanks to engineering, we didn’t have the right guidance in the procedure, and now we just created some more operating experience. You know, this kind of thing happens a lot around here. It seems that engineering never has many corrective actions that go past their due date, they get them all signed off on time, but if you really think about it, we never really see the actions put into place. That might be something you want to look into while you’re here. These things are hard enough to operate safely, but when your support organizations are only looking out for themselves and not getting the job done, the whole team suffers.”

# Scene 6, Alleger wants to meet somewhere else



Set up: alone in RIO studying when alleger comes in acting scared and secretive

CI: "I don't want to bother you, I can see you're busy, but I have something important that I have to tell you, it involves a safety issue here at the plant. The only problem is, I can't tell you here, somebody may see me here and I don't want anybody to know I was talking to the NRC. Can you meet me tonight somewhere? Where are you staying, maybe I could come there, or we could meet in that little bar on the corner of 1<sup>st</sup> and Main, nobody goes there. I think I hear someone coming, I've got to get out of here, meet me at 9:30 tonight alright. It's real important."

# Scene 7, Explanation of what really happened

Set up: you and team lead in RIO with CRS and SM explaining what really happened

SM: “We just wanted to give you a briefing on where we are. We finished our prompt investigation and this is what we found.” (hand a copy to the team leader)

CRS: “You already know about the operating experience not be incorporated into our procedures, that was a major contributor to the problem. In addition to that, we did our hydrogen peroxide adds a little different and apparently not enough degassing. That was also a contributor to the instrument problem.”

SM: “As you can see there in our report, we identified what we believe to be the causes and contributing factors, and we’ve identified some corrective actions that we believe will prevent this type of thing from happening again. The best part of this is, we didn’t really identify any human performance issues since we’ve completed all of our actions from the substantive cross cutting issue in human performance. If you have any questions about the report, give me a call.”



Team Leader: “Alright, thanks for stopping by and providing this report, we’ll look it over and let you know if we have any questions.”

# Scene 8, Team Leader unsatisfied



Set up: team leader in RIO, SM & CRS just left the office

Team Leader: “You know this report is B.S. They found the real obvious stuff, and we are going to write them up for those stupid mistakes. I count at least 6 violations here and I haven’t even started really looking yet. I think in the exit meeting I’m going to have to tell them how it really is; their whole ops program is screwed up. I can’t believe we bought their actions for the substantive cross cutting issue. It’s obvious it hasn’t been fixed. I’m going to tell them they are completely hosed on training, watchstanding and alarm response, and this is the worst run organization I’ve ever inspected. Maybe that will be a strong enough message to get the point across to them. I can’t believe we haven’t shut these guys down yet. How do you think they’ll take that message? You’ve seen this mess all week long, What would you tell them?”

# Scene 9, Plant Manager allegation against team leader



Set up: you go to the plant manager's office and she is working alone, she makes an allegation against the team leader

PM: "Hey, thanks for dropping by. I hope you guys are getting everything you need to finish up your inspection. I was wondering if you could help me out. I'm having a real problem with your team leader. He has been behaving pretty unprofessionally, he confiscated some original documentation and is refusing to return it. Is there anything you can do give us a hand with this?"

# Scene 10, Report issues to Region

Set up: in RIO with Team Lead on phone with BC debriefing the inspection, Team lead briefs first 2 findings and has you brief the last

BC (over phone): “Alright, I’ve got those two, you said you had a third?”

Team Lead: “That’s right, I’m going to let one of the team inspectors brief you on that one.”

BC (over phone): “OK, what do you got?”

Provide a copy of the write-up in student play book, and have them read and then present the issue to the BC. Ask questions for clarification and ensure a safety focus is maintained.



# Scene 11a, Briefing the regulatory assurance manager

Set up: briefing the Reg affairs mgr in the RIO, start at end of 2<sup>nd</sup> finding, Team lead has to go, team inspector will brief third. (same as brief to BC)

Team Leader: “Any questions or issues with the first two findings that I’ve just briefed you on?”

RAMgr: “No, I understand them, no issues. What else do you have?”

Team Leader: “There is one more, but I have to go. I’m going to let one of my team members brief you on this one.” (team leader leaves)

RAMgr: “Alright, let me have it.”



# Scene 11b, Reg Affairs mgr getting upset by cross cutting aspect

Set up: You and Reg Assurance Mgr, you are debriefing 3<sup>rd</sup> finding and cross cutting aspect, Reg Assurance Mgr getting upset, disagreeing, and raising his voice.

RAMgr: (elevating voice as argument continues) “Hey, look, I understand the violation because criterion V requires us to put quantitative and qualitative information in our procedures, but this really seems like you guys are out to get us. **How can you say this is human performance, come on, the procedure is written the way it is, ok, but if our guys follow the damn procedure, how can they be doing anything wrong. EVER SINCE YOU STARTED DOING THIS STUPID CROSS CUTTING THING, YOU HAVE BEEN OUT TO NAIL US. (Stand and raise arms, show frustration) YOU DON’T KNOW THE KIND OF CRAP I HAVE TO TAKE FROM CORPORATE ABOUT THIS CROSS CUTTING B.S. AND IT SEEMS LIKE YOU’RE JUST MAKING IT UP TO SCREW WITH US.**”



# Scene 12, SRI & Team leader leaving you for the night

Set up: Team Lead and SRI leaving you in RIO to work on exit notes, the plant will call with an emergency



SRI: (leaving office): “That’s enough for me for one day, I’ll see you guys tomorrow, are you ready for your exit?”

Team Lead: (also leaving): “I think we’re ready. (to team inspector) I know you have a few notes you are working on for the exit, you did a good job today dealing with the Reg Assurance Manager, you’ll do fine in the exit. Don’t stay all night, I’ll see you in the morning.”



You are left alone, and the phone rings, you answer and it’s the MCR looking for the SRI.

CRS (on phone): “Yea, this is the control room, is the SRI there? Already left for the day, well, let me inform you then, we have just entered into our emergency operating procedures and are declaring a NOUE, I’m sending out the page to activate the emergency response organization because many of them have left for the day already too, and I think this thing is going to escalate. I’ll get you more details when we have them, but it’s a little busy in here right now.” (hangs up, and the emergency alarm sounds)

# Scene 13, MCR emergency turn over to SRI



Set up: MCR, you have responded to the emergency, the SRI has returned to site to relieve you in the MCR. You are trying to give him a turn over, but the operator thinks you are in his way and asks you both to leave the at the controls area.



SRI: “Hey, good job, this stuff always happens right after I leave. I was half way home, and my cell phone rang. I knew you were here, but didn’t want to leave all the fun for you.”

Operator: “Do you guys know we are in the middle of an emergency response here. Can’t you guys take this somewhere else?”

SRI: “ We have a job to do here too, I’m just trying to get the rundown on what’s happening, and then he’ll be taking off.”

Operator (needing to get to a switch that you and the SRI are blocking): “You guys are really in my way now, (to CRS) Can you get these guys out of my way?”

CRS: “If you are not currently working on this emergency procedure, get out of the control room, (to inspector and SRI) and that includes you guys too.”

SRI (quietly to inspector): “What do you think we should do? Are you going to let them talk to us that way? Don’t we have a right to be here?”