

Thompson, James

From: Chris Dixon <cdixon@acuren.com>
Sent: Friday, August 01, 2014 9:06 AM
To: Thompson, James
Subject: RE: Additional questions for Acuren USA's 2nd CAL response
Attachments: Kenai Boundary Control 8D.pdf; Proposed shooting area at Acuren USA Kenia Facility.docx; Copy of Anchorage Shop Calculations.xlsx

Good Morning James,

As per our phone conversation on 7/22/2014 a formal response is not being generated, however this email along with attachments is to answer the additional questions.

- 1) Could you explain what exactly is the "Golden Rule Policy?"

The Golden Rule Policy was put in place by Acuren Senior Management in the Spring of this year as a means to communicate expectations that certain requirements will be followed as required by regulations and the Acuren Radiation Operating and Emergency Manual and that there will be a zero tolerance when these requirements are not adhered to. Following issuance of that policy all Acuren radiographic personnel were trained and were tested to ensure they fully understood its contents. Along with that policy a Performance Review Action Board has been established to review all instances when a Golden Rule(s) has not been followed. This board consists of non-bias senior personnel and its purpose is to allow for a review of the circumstances surrounding the failure to follow the rules and take appropriate personnel actions.

- 2) You stated that the gate would be closed and locked before radiography in Kenai; how do you lock a gate that does not belong to you (maybe special permission from building manager)? How would this affect people from simply walking down the hall and out the back door into the laydown yard?

Locking of the gate during radiographic operations is only one of the barriers which will be in place. Other barriers include constant surveillance of the area by the radiography crew and placement of cones and tape or rope. The locking of the gate will be coordinated with the building manager prior to any radiographic operations.

- 3) You stated that tenants would be notified when radiography would be performed at Kenai... how would they be notified (PA announcement, knock on doors...)?

Prior to any radiographic operations being conducted each available tenant will be notified personally by an Acuren representative just before the operations begin. This will be accomplished by personally visiting each occupant. In addition, postings will be placed at each entrance to the facility which will summarize what and when activities will be conducted. A phone number will be provided in case any tenant has questions about the operations. Also, as part of the radiographic operation, one of the radiographic crew members will perform a walk down of the surrounding areas to ensure that no tenant or other member of the public have entered the controlled area.

- 4) You stated that Acuren USA has established RSO oversight of day to day operations within Acuren USA; how does this differ from the RSO oversight of day to day operations that existed prior to the April 10th inspection?

In March, 2014 the RSO listed on the Acuren USA license resigned. While an amendment request was being prepared the Kenai facility RSO took on the added responsibility of oversight of the Acuren USA license in addition to his responsibilities for Kenai. That same individual also had responsibilities for being the site technical representative at the local refinery. Following the April 10th inspection it was discovered that this individual had been devoting the majority of his time as the technical representative at refinery rather than effectively implementing his responsibilities for the Acuren USA radiation safety program.

Following the April 10th inspection the Corporate Radiation Safety Director assumed the overall responsibility for the Radiation Safety Program for

Acuren USA and since then has spent minimum of 40 hours per month at either the Anchorage or Kenai facility. During that time 100% of his efforts were spent overseeing the Radiation Safety Program. In addition, since the April 10th inspection day to day oversight has been augmented by having facility RSOs from other Acuren facilities being physically present at either Anchorage or Kenai. These individuals devoted 100% of their time to the Acuren USA Radiation Safety Program.

On June 22, 2014 Acuren USA hired a full time Compliance Manager (Mr. Steve Green) for the Kenai and Anchorage facilities. Mr. Green is fully qualified as a RSO in accordance with 10 CFR Part 34. Mr. Green will provide day to day oversight and physical presence and will report directly to the Corporate Radiation Safety Director or the facility RSOs from other Acuren facilities. Mr. Green's responsibility will only be to maintain compliance and overseeing that Acuren USA Radiation Safety Program.

- 5) You stated that Acuren USA performed a causal analysis (deep dive) of the April 10th event; could you provide NRC with a copy of this?

Please see attached.

- 6) You stated that no radiography would be performed in the Kenai shop, and that all future radiography at the Kenai facility would be performed in the laydown yard; where in the lay down yard (is there a specific location)? What about during inclement weather?

The far North East corner of the laydown yard is the most remote area and where radiographic operations shall occur, this area is in excess of 250 feet from any occupied office or tenant location. This allows 360 degree constant surveillance and barrier controls (postings, cones, tape and or rope) will be maintained. As previously stated the entry gate will also be closed and locked for additional controls. During inclement weather radiography will be evaluated to determine capabilities, However no radiographic operations will occur in the garage.

- 7) The dose calculations provided for the Kenai facility were all performed at 50 feet; we assumed that was based on the location of the corner office. However, members of the public could have been anywhere in the laydown yard, much like our inspectors were on April 10th. We need you to provide calculations for the areas around the shop, using the dose rates measured during the re-enactment (for example, using the inverse-square law to find the dose at a few feet away from the shop walls).

Utilizing a conversion factor of 1.27 the physical surveys conducted during the re-enactment of North barrier at 126' measured .003 mr/hr, East barrier at 126'. measured 028 mr/hr. total shot time of 744 seconds and the inverse square law the following dose would have been expected at 10 feet from the source.:

**Adjacent to North wall 10 feet from source; .125 R / total exposure time
Adjacent to East wall 10 feet from source; 1.166 R / total exposure time**

- 8) We cannot replicate the calculations in the last 4 columns of the Anchorage facility (columns I, J, K, L). Take for instance the last entry for 5/4/2014; all columns are correct until you get to Column I. Column I should equal Column H x Column E, exposure rate at 30 feet times the exposure time. So 0.0275 R/hr times 2 minutes should equal 0.000917 R... you have it as 0.000038 R. Likewise, Column J (at 45 feet) should equal 0.000407 R; Column K (at 67 feet) should equal 0.000173 R; and Column L (at 75 feet) should equal 0.000147 R. Could you take another look at these calculations and see if you understand our dilemma, and correct the errors?

After evaluating the calculation work sheet it was determined a mistake was made under the time column utilizing the colon between minutes and seconds, and has been corrected. Constant surveillance was maintained at all times of the areas of concern and remote areas beyond the posted barriers.

Acuren has also evaluated the Safety Culture as it relates to Radiation Safety. Many items and metrics have long been part of this policy and culture however it was never put into a document. The Safety Culture Policy formalized and has been circulated within senior management for review.

Mr. Thompson I believe I have addressed all the concerns regarding the additional questions however should you have any further questions please contact me.

Respectfully,

Chris Dixon

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From: Thompson, James [<mailto:James.Thompson@nrc.gov>]

Sent: Monday, July 21, 2014 1:43 PM

To: cdixon@acuren.com

Subject: FW: Additional questions for Acuren USA's 2nd CAL response

Importance: High

Chris:

Have you had a chance to get these questions answered yet? Let me know the approximate date at which we should receive your response; after we receive your response, we can close out the CAL and send you an acknowledgement.

Thanks,
-James

From: Thompson, James

Sent: Monday, July 14, 2014 2:52 PM

To: 'cdixon@acuren.com'

Subject: Additional questions for Acuren USA's 2nd CAL response

Importance: High

Chris:

We had planned on trying to set up a call with you all, but decided it was best if we simply send an email, since it is so difficult getting the different people/time zones/work schedules to sync up. The Inspection Team and management here had some questions regarding your 2nd response to the CAL:

- 1) Could you explain what exactly is the "Golden Rule Policy?"
- 2) You stated that the gate would be closed and locked before radiography in Kenai; how do you lock a gate that does not belong to you (maybe special permission from building manager)? How would this affect people from simply walking down the hall and out the back door into the laydown yard?
- 3) You stated that tenants would be notified when radiography would be performed at Kenai... how would they be notified (PA announcement, knock on doors...)?
- 4) You stated that Acuren USA has established RSO oversight of day to day operations within Acuren USA; how does this differ from the RSO oversight of day to day operations that existed prior to the April 10th inspection?
- 5) You stated that Acuren USA performed a causal analysis (deep dive) of the April 10th event; could you provide NRC with a copy of this?
- 6) You stated that no radiography would be performed in the Kenai shop, and that all future radiography at the Kenai facility would be performed in the laydown yard; where in the lay down yard (is there a specific location)? What about during inclement weather?
- 7) The dose calculations provided for the Kenai facility were all performed at 50 feet; we assumed that was based on the location of the corner office. However, members of the public could have been anywhere in the laydown yard, much like our inspectors were on April 10th. We need you to provide calculations for the areas around the shop, using the dose rates measured during the re-enactment (for example, using the inverse-square law to find the dose at a few feet away from the shop walls).
- 8) We cannot replicate the calculations in the last 4 columns of the Anchorage facility (columns I, J, K, L). Take for instance the last entry for 5/4/2014; all columns are correct until you get to Column I. Column I should equal Column H x Column E, exposure rate at 30 feet times the exposure time. So 0.0275 R/hr times 2 minutes should equal 0.000917 R... you have it as 0.000038 R. Likewise, Column J (at 45 feet) should equal 0.000407 R; Column K (at 67 feet) should equal 0.000173 R; and Column L (at 75 feet) should equal 0.000147 R. Could you take another look at these calculations and see if you understand our dilemma, and correct the errors?

Please answer these questions at your earliest convenience, and send them back to me as a reply to this email. We appreciate your continued cooperation with this inspection effort.

Thank you,
-James

Date of Work	L II	Isotope	Ci	Total Exposure time (min)	R/Hr @1' (11)	R/Hr @1' w/4 Hvl's	R/hr @ 30' w/4 Hvl's	Exposure @ 30' w/4Hvl's	Exposure e @45' w/4hvl's	Exposure @67' w/4Hvl's	Exposure @75' w/4Hvl's
12/08/2013	[REDACTED]	Ir-192	52	40	270.4000	16.9000	0.018777778	0.012519	0.005564	0.002510	0.002003
12/09/2013	[REDACTED]	Ir-192	51.5	12	267.8000	16.7375	0.018597222	0.003719	0.001653	0.000746	0.000595
12/10/2013	[REDACTED]	Ir-192	51	26	265.2000	16.5750	0.018416667	0.007981	0.003547	0.001600	0.001277
12/12/2013	[REDACTED]	Ir-192	50.1	44	260.5200	16.2825	0.018091667	0.013267	0.005897	0.002660	0.002123
12/12/2013	[REDACTED]	Ir-192	50.1	18	260.5200	16.2825	0.018091667	0.005428	0.002412	0.001088	0.000868
01/15/2014	[REDACTED]	Se-75	70.9	10	155.9800	9.7488	0.010831944	0.001805	0.000802	0.000362	0.000289
01/16/2014	[REDACTED]	Se-75	70.5	11	155.1000	9.6938	0.010770833	0.001975	0.000878	0.000396	0.000316
01/18/2014	[REDACTED]	Se-75	69.7	4	153.3400	9.5838	0.010648611	0.000710	0.000316	0.000142	0.000114
01/19/2014	[REDACTED]	Se-75	69.3	155	152.4600	9.5288	0.0105875	0.027351	0.012156	0.005484	0.004376
01/19/2014	[REDACTED]	Ir-192	35.1	12	182.5200	11.4075	0.012675	0.002535	0.001127	0.000508	0.000406
01/20/2014	[REDACTED]	Se-75	68.9	15	151.5800	9.4738	0.010526389	0.002632	0.001170	0.000528	0.000421
02/03/2014	[REDACTED]	Se-75	63.5	24	139.7000	8.7313	0.009701389	0.003881	0.001725	0.000778	0.000621
02/04/2014	[REDACTED]	Cs-137	0.163	3	0.5542	0.0346	3.84861E-05	0.000002	0.000001	0.000000	0.000000
03/01/2014	[REDACTED]	Se-75	54.7	17	120.3400	7.5213	0.008356944	0.002368	0.001052	0.000475	0.000379
03/05/2014	[REDACTED]	Se-75	53	5	116.6000	7.2875	0.008097222	0.000675	0.000300	0.000135	0.000108
05/04/2014	[REDACTED]	Ir-192	76.2	2	396.2400	24.7650	0.027516667	0.000917	0.000408	0.000184	0.000147