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Mr. Lester Posada
Project Officer, Nuclear Processing Facilities Division
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Subject: SRBT Response to CNSC Staff Review of 2020 Annual Compliance Report

Dear Mr. Posada,

Thank you for your recent letter [1] summarizing CNSC staff comments on SRBT's 2020 Annual Compliance Report (ACR).

Each CNSC staff comment is repeated below, followed by our response.

> ***Comment:***
>
> *SRBT reported the number of internal audits completed. There is no reference to what is the number of audits scheduled in order for one to get a sense of the actual versus the scheduled.*
>
> ***Requested Action:***
>
> *SRBT should consider providing a list of the scheduled audits in future annual reports to be able to compare the number of actual audits completed versus the scheduled audits.*

For 2020, a total of eleven internal audits were scheduled to be performed, including:

- Environmental Risk Assessment Process
- Management System
- Engineering Department
- Radiation Safety and Dosimetry Services
- Quality Department
- Environmental Protection – EMP
- Shipping and Import/Export
- Health and Safety
- SRBT North Carolina (supplier audit)
- PWI Stratiform (supplier audit)
- Production Departments

Of these scheduled audits, only the two supplier audits were not executed due to travel restrictions associated with the COVID-19 pandemic. The scope of these audits were not expected to include any safety-related considerations; as such, there is no impact on nuclear safety due to the cancellation or deferral of these activities.

Future ACRs will include a more detailed description of the scheduled / planned internal audits for the reporting year, along with information on the completion rate of these audits.

Comment:

Table 13 provides average quarterly tritium concentrations over the past two years and Appendix F provides passive air sampler results for 2020. SRBT noted a "measured impact" on the magnitude of low-level chronic airborne contamination levels which led to the Health Physics team implementing improvements to lower this value but the "measured impact" is not clear from the data provided.

Requested Action:

SRBT is requested to define "a measured impact" for low-level, chronic airborne contamination levels.

The measured impact discussed is in direct reference to the relative increase in the average quarterly concentration of tritium in air in the four highlighted facility areas, particularly between Q4 2019 and Q1 2020, as shown in Table 13 in SRBT's 2020 ACR.

A small commensurate increase in effective doses to SRBT nuclear energy workers is also correlated with the conditions described during this time period, as shown in Table 14 of the ACR, which itself is an additional measured impact.

The measures taken to reduce the concentration of chronic, low-level tritium in air by the Health Physics Team were very effective at eliminating the measured impacts of the conditions described.

Comment:

Table 33 of the Annual Compliance Report is similar to the Total Effective dose table contained within the Environmental Risk Assessment (Page 150). However, the effective doses in table 33 is, on average, an order of magnitude lower than that calculated in the Environmental Risk Assessment. It is assumed that these doses were calculated with different inputs.

CNSC staff understand that the effective dose in the annual report and ERA both fall far below the annual limit of 1 mSv, but would like to know how this assessment differed from the assessment conducted within the ERA, to arrive at the lower effective dose.

Requested Action:

SRBT is requested to explain why the effective doses in table 22 are lower than the effective doses calculated in the Environmental Risk Assessment.

The calculated effective doses in SRBT ACRs are routinely based on real data and measurements obtained via the Environmental Monitoring Program (EMP) for the particular calendar year.

The calculated effective doses put forth in the SRBT Environmental Risk Assessment (ERA) [2] are based upon much more conservative treatments of the highest EMP measurements over the recent operational history of the facility.

In the ERA, hypothetical effective doses were calculated by taking the highest measured tritium concentration in a given media type (air, water, vegetation) over the past five years, and then artificially doubling the concentration, then applying each input a static condition in the environment.

Section 3.2.2 of the ERA specifically delineates this methodology, which is repeated here for ease of review:

"The methodology is as follows:

- *For each of the exposure inputs described by the conceptual model, select the highest validated individual EMP measurement of the contaminant concentration from the last five years of operations (2015-19 calendar years), at the point of impingement / exposure.*
- *Multiply this value by a factor of 2 in order to add additional conservatism, and account for potential increases or variations in facility production rates in the future.*
- *Apply the conservative intake rates for air, water and food as applicable for each representative person, as described in N288.1-14 (or otherwise justified), in order to derive the effective dose over a given year.*
- *Add all effective doses together for a total calculated potential effective dose to the representative person."*

The table below compares the key applied input values for human exposure routes between the ERA and the 2020 ACR (adult worker):

INPUT PARAMETER	UNITS	2020 ACR INPUT	ERA INPUT
Air concentration, residential (HTO)	Bq/m^3	3.89	49.00
Air concentration, occupational (HTO)	Bq/m^3	7.25	29.00
Drinking water (HTO)	Bq/L	47	464
Residential produce (HTO)	Bq/kg	63	420
Residential produce (OBT)	Bq/kg	3.0	26.0
Commercial produce (HTO)	Bq/kg	3.0	24.0
Commercial produce (OBT)	Bq/kg	1.0	6.0
Animal produce – milk (HTO)	Bq/kg	3.67	10.00

In summary, the effective doses presented in the ERA are purely hypothetical, with the intention to bound all potential routine operational conditions at the facility, while the dose reported in the ACR, while also including certain significant conservatisms, are intended to more closely reflect expected 'real' doses to members of the public.

Comment:

CNSC staff had identified an adverse trend related to the concentration of tritium in air, as it had increased from 33.44 Bq/m3 in 2016 to 48.42 Bq/m3 in 2019. An even larger increase was reported in 2020, with a value of 85.15 Bq/m3. Rationale as to why there was a significant increase in 2020 was provided in the annual compliance report; it was attributed to an increase in the minimum detectable activity (MDA) values.

For the 2020 reporting period, SRBT resorted to performing their own passive air monitoring/sampling, as a result of the third party laboratory becoming unavailable due to the COVID-19 pandemic. This led to one notable difference in the analysis: the MDA used by the third party laboratory was lower (0.28-0.35 Bq/m3) than SRBT's MDA values (0.68-0.84 Bq/m3). The reason behind this increase in MDA values is unclear.

SRBT has provided an explanation that attributes the elevated tritium in air concentration to the elevated MDA values used and a different approach to determining the cumulative total. However, CNSC staff are unclear as to how there is a notable discrepancy between the MDA values produced by the third party laboratory in previous years, and by SRBT in 2020.

Requested Action:

SRBT is requested to provide an explanation for the details behind the significant difference in the MDA values, and technical evidence to support that the methods used by SRBT are as effective, and comparable to those used by the third party laboratory.

There are three distinct components to SRBT's response to these comments: explaining the difference in minimum detectable activity (MDA) values; demonstrating that SRBT's methods are effective and fit-for-purpose, and describing measures that have been taken (and are planned to be taken) in order for SRBT to achieve lower MDAs and more consistent data in all EMP sample types.

<u>Explanation of the Differences in MDA</u>

The difference between the MDA that was routinely achieved by the independent third-party laboratory, and that achievable to date by SRBT, is predominantly due to differences in the type of equipment used for liquid scintillation counting, and the environment where the sample preparation and counting takes place.

Two important inputs that affect the MDA for any given analysis are the background count rate, and the sample counting time. The primary difference between the results achievable by the SRBT laboratory and the third-party laboratory lies in the background count rates that are achievable by either laboratory.

The third-party laboratory routinely analyzed SRBT EMP samples using ‘Quantulus’ model ultra low-level liquid scintillation counters. As well, samples are counted at a specially-designed low-level counting laboratory that ensures the minimization of any influence from external sources of tritium or other radionuclides.

By using this counting technology in this location, much lower background count rates are achievable by the third-party laboratory – for example, passive air sampler background count rates of between 1-2 counts per minute were routinely reported.

The liquid scintillation counting technologies used by SRBT are not specially designed to achieve the ultra low-level count rates of the Quantulus line of counters. SRBT uses ‘TriCarb’ model counters which exhibit inherently higher background count rates than the Quantulus line of counters. Additionally, the counters operate within the SRBT facility, which can result in an additional influence on background count rates, depending on production rates and work activities.

The Health Physics Team strives to ensure that the influence of the facility-sourced tritium background is minimized to the extent practical; however, it cannot be eliminated in its entirety. As an illustrative example, the count rate for passive air samplers prepared and counted at SRBT typically varied between 20-30 cpm upon initially taking over these activities during the pandemic.

Lower MDA values can be achieved to an extent simply by extending the sample count times to compensate for the higher background count rates; however, there are limits to the amount of time SRBT can count any given sample given the volume of samples that need to be analyzed in any given month.

The combination of these factors result in achieved MDA values that, for passive air samplers in particular, were notably higher when counted by SRBT.

<u>Effectiveness of Methods Used by SRBT</u>

Despite the relatively higher MDA values when conducting in-house analyses, the results obtained by SRBT are still fit-for-purpose, with a significant margin. The increase in MDA does not result in any appreciable change in the effective doses calculated to members of the public nor risk to the environment.

The measured magnitude of statistically-positive detection events for average tritium-in-air concentrations and tritium concentrations in precipitation continues to be well aligned with historical norms.

As well, annual intercomparison exercises between the independent third-party laboratory and the SRBT laboratory continue to show good correlation for all monitoring programs under the Environmental Management System.

The only significant impact is in a slight loss of sensitivity to detecting very small changes in tritium concentrations in the environment, as measurements in the band between the MDA of the third-party laboratory and SRBT's MDA are no longer considered as a statistically-positive detection event for sample analysis.

Despite this loss of sensitivity, the absolute magnitude of the concentrations in this band of measurements is exceedingly small, thus the impact of risk calculations is minimal.

To summarize, the shift in certain types of sample analyses away from third-party laboratories has been a successful initiative, and does not result in any loss of safety-significant sample analysis capacity.

The data generated by our monitoring programs is of high quality and fit-for-purpose, and annual intercomparison exercises continue to provide confidence in results of monitoring programs.

Improvements to Sampling and Analysis

Once the sampling and analysis protocols were initially designed, validated and implemented, SRBT began to continuously investigate ways to reduce the MDA values for each individual sample type. Through the last nine months of 2020, it became clear with experience that variations in the background tritium air concentration in the facility itself were the most significant influence on the consistency of the data being generated through the EMP, especially with respect to passive air sampling.

As a result, a new process has been implemented in early 2021, where materials and equipment dedicated to sampling and analysis are sequestered off-site. Sample preparation is also conducted away from the facility, with the prepared sub-samples being brought to SRBT immediately prior to counting. As a direct result of these measures, the average MDA for passive air sampling has been reduced from an average of 0.79 Bq/m^3 prior to the implementation of these changes, down to 0.64 Bq/m^3 in the first three months of off-site preparation.

This initiative is intended to be a precursor towards planning for the design, construction and commissioning of a dedicated low-level environmental counting laboratory. Preliminary planning for this laboratory had been initiated in early 2021 after a recommendation made through the annual Management Review process.

Comment:

Same comment as previous.

Requested Action:

CNSC staff understand that the MDA values have increased in comparison to last year. However, the magnitude of the increase is small in comparison to the increase in the average concentration of the passive air sampler (PAS). Given that the average concentration for the PAS was two orders of magnitude greater than SRBT's MDA values, was this the sole contributor to the notable increase of the average concentration for the PAS (48.42 Bq/m3 in 2019 to 85.15 Bq/m3 in 2020)?

It is very important to note that the stated data points in CNSC staff's comment are not average concentrations of the passive air samplers for each year – the stated values of 48.42 Bq/m^3 and 85.15 Bq/m^3 are summations of the average tritium concentration detected at all individual sampler stations over the course of the respective calendar year.

This statistical measure is traditionally used in our data analysis to illustrate the overall annualized trend of SRBT's local impact on environmental tritium-in-air concentration across the entire sampling array.

The magnitude of the increase in the MDA is indeed relatively small; however, the impact on the summation of the average concentrations in passive air samplers for the EMP is influenced by SRBT's historical practice of statistically treating 'less than MDA' measurements in EMP data as an absolute value equal to the MDA, when calculating the reported sum of the averages. By treating these measurements as equal to the MDA value for trending (in lieu of measurement value of zero), SRBT adds an artificial conservatism to the interpretation of data.

Although this practice does influence the final calculated sum of averages, SRBT has determined that it is not the only contributor to the noted increase in this data point. As described in our disposition of the previous comment, variations in the background tritium air concentration in the facility itself were found to be the most significant influence on the consistency of the data being generated through EMP passive air sampling.

As an illustrative example, by eliminating all measured results that were determined as less than MDA over the ten-month time period of March – December 2020 from the average calculation of tritium in air concentration at each station, the sum of the average tritium concentration at each station is calculated as 105.01 Bq/m^3.

If we apply this data processing methodology over the same time period for calendar year 2019, the sum of the averages is calculated as 50.50 Bq/m^3. As such, we can clearly see that there is a more significant influence on these measurements. With an achieved decrease in annual gaseous tritium oxide emissions in 2020 (9,755 GBq HTO vs. 11,858 GBq in 2019), one would not expect a doubling of the EMP passive air sampler sum of the averages.

Through experience, as well as through analysis of production rates and activities, effluent monitoring data, and in particular in-house air sampling data, it became clear toward the end of 2020 that sample preparation activities physically conducted at the SRBT facility have a propensity to be susceptible to sample cross-contamination, as sampling materials are stored in the facility in areas that can exhibit low, but non-zero tritium-in-air concentration.

This determination resulted in the initiative to both store materials and prepare EMP passive air samples off-site, in order to determine the magnitude of the effect of the facility environment on these types of samples by elimination. The results to date since this initiative began have been extremely promising, with a reduction in the typical MDA being achieved, as well as the elimination of cross-contamination of these very low-level samples.

For the four months of completed data since this change (March – July 2021), the summation of the average tritium concentration at all sampler stations (rejecting those less than MDA) is calculated to be 58.90 Bq/m^3, which is much more aligned with expected historical norms when contrasted with gaseous emissions of tritium over that period (2,370 GBq tritium oxide released between March 2 – June 29, 2021; projected annual release of approximately 7,248 GBq).

The practice of off-site sample preparation will continue going forth, with an eye towards potentially initiating an improvement project for an off-site environmental laboratory in the future, once sufficient resources are available.

> ***Comment:***
>
> *It was noted in the 2020 report that the average tritium concentration in the collected surface water runoff (1030 Bq/L) has more than doubled compared to the 2019 value (432 Bq/L). The 2020 value is also approximate 5.75 times larger than the 2018 value (179 Bq/L). SRBT provided a much more fulsome, but general explanation of contributing factors that can affect the rooftop drainage systems; all of which being natural causes related to weather and precipitation over the monitoring period. However, no specific evidence or quantitative analysis to support this significant increase over the past 2 years has been provided.*
>
> ***Requested Action:***
>
> *SRBT is requested to provide supporting evidence or a quantitative analysis that points to specific contributing factors that caused a sizable increased average tritium concentration in the downspouts over the past two years. As part of this, please include confirmation that it is entirely due to natural causes such as those identified in the 2020 report (weather/precipitation differences over the monitoring periods), and determine if there are any factors linked to facility operation/production.*

To preface our response to these comments, it is crucial to understand that the routine analysis of precipitation and snow melt running off of the rooftop of the SRBT facility (i.e. 'downspout' measurements) was originally initiated as part of the efforts to characterize sources of tritium impacting the groundwater aquifer beneath the SRBT facility in the mid-2000s.

The practice of infrequently sampling and analyzing this water continued beyond the release of the Groundwater Studies Report in 2008 [3], in order to provide trending information on the effects of modifications to SRBT processing operations. These samples have continued since then, at a target rate of at least once per calendar quarter. Tritium in this water, as well as from many other runoff events not sampled, are eventually reflected in the concentration of tritium in groundwater.

It is also important to note that groundwater monitoring data has conclusively demonstrated that the impact of SRBT operations on groundwater has been significantly reduced over the years. Table 26 in SRBT's ACR for 2020 clearly illustrates the continuing downward trend in tritium concentration across all monitoring wells. To further emphasize this point, we have included the following table that was submitted as part of SRBT's recent licence renewal application [4]:

WELL ID	ANNUAL AVERAGE – 2015 (Bq/L)	ANNUAL AVERAGE – 2020 (Bq/L)	% CHANGE
MW06-1	4,338	762	-82%
MW06-2	1,965	877	-55%
MW06-3	1,218	244	-80%
MW06-8	906	579	-36%
MW06-9	2,731	1,527	-44%
MW06-10	51,635	29,513	-43%
MW07-11	1,521	924	-39%
MW07-12	463	422	-9%
MW07-13	13,237	4,406	-67%
MW07-15	1,680	1,262	-25%
MW07-16	2,188	1,003	-54%
MW07-17	780	272	-65%
MW07-18	5,491	1,494	-73%
MW07-19	3,222	1,198	-63%
MW07-20	775	326	-58%
MW07-21	1,121	393	-65%
MW07-22	1,171	783	-33%
MW07-23	2,206	1,252	-43%
MW07-24	2,314	1,644	-29%
MW07-26	1,941	514	-74%
MW07-27	4,869	1,994	-59%
MW07-28	1,446	705	-51%
MW07-29	3,950	1,485	-62%
MW07-31	756	182	-76%
MW07-32	128	59	-54%
MW07-34	3,312	1,297	-61%
MW07-35	3,945	1,898	-52%
MW07-36	2,892	1,468	-49%
MW07-37	1,009	763	-24%

Table 1: GMP Well Concentrations (2015 vs. 2020 averages)

The concentration of tritium in downspout water does not factor into the calculation of effective dose to human receptors, nor does it form an input into the determination of environmental risk to any valued ecosystem component, as described in SRBT's Environmental Risk Assessment (ERA) [2].

The explanation that was provided in our response to CNSC staff comments on the 2019 ACR [5] was very fulsome and comprehensive; however, it is recognized that the description of the contributing factors to any given measurement of tritium concentration in downspout waters was qualitative, based on SRBT's understanding of the physical arrangement of the roof and its drainage systems, and meteorological and operational parameters at any given point in time.

On page 104-105 of the 2020 ACR, SRBT specifically addressed the main contributing factor in the higher annualized average for tritium concentration in downspouts:

> *"Samples obtained on May 29, 2020 exhibited comparatively higher concentrations than usual. These samples were obtained quickly after the onset of a brief but heavy period of rainfall, where tritium processing was being performed up to the immediate detection of rainfall.*
>
> *In addition, the environmental conditions in the period leading up to the date of sampling had been warm and dry for an extended period, likely resulting in an abnormally elevated rate of deposition on the building roof for a prolonged period. Weather station records show that the last significant accumulation of precipitation took place on May 15, 2020.*
>
> *Both of these factors likely contributed to the elevated concentrations detected on May 29, 2020."*

These statements clearly note that there was indeed a specific operational factor in the elevated average value for tritium concentration in sampled and measured runoff water in 2020, as well as various natural meteorological influences as would be expected. We believe that this comment should sufficiently address the second component of CNSC staff's requested action in this regard.

Any meaningful quantitative analysis of the individual effect of any of the given variables outlined in SRBT's disposition of comments from the 2019 ACR [5] (i.e. precipitation event characteristics, gaseous effluent characteristics since last precipitation event, wind direction during said events, etc.) would be very challenging to accomplish. In order to determine the effect of any given variable, the other variables would need to be controlled for, which is impracticable if not impossible to achieve with any significant certainty given the lack of control of natural parameters.

As well, a quantitative analysis of this multi-variable system would not significantly reduce environmental risk, nor reduce the effective dose to any member of the public. The only environmental aspect that is impacted by tritium carried in downspout water is the groundwater aquifer, the condition of which has clearly and conclusively been shown to be improving over time with the operational changes implemented.

It's also important to note that any given downspout sample represents a very small volume of the total discharge during any significant rain or melt event. The concentration of tritium in the stream of water will naturally vary with time and flow rate.

Given these points, in order to provide further confidence in the data, going forward SRBT plans to implement two changes in the manner in which downspouts are sampled and trended over time.

First, in the second half of 2021 during periods of rainfall where qualified technicians are available to obtain samples, we will make efforts to grab more than a single sample from at least one downspout during a significant precipitation event. Samples will be obtained in periodic intervals for the duration of the event.

We will attempt to take grab samples as soon as possible to the beginning of a given event, and then periodically and repeatedly until it concludes, at a rate to be determined based upon the expected duration and characteristics of the rainfall event. This initiative will provide further quantitative evidence of any variability of tritium concentration in downspout water, dependent on time of sampling relative to the time of the onset of the event.

Second, when recording data on tritium concentration measured in downspout water, we will also record the following additional data points:

1. The number of rainfall events since the last samples were obtained;
2. The total rainfall (in mm) that has fallen since the last samples were obtained;
3. The amount of tritium (both HTO and HT) released via gaseous effluent since the last samples were obtained;

We will also investigate attempting to correlate other significant meteorological characteristics that likely impact the deposition of tritium on the facility roof, such as percentage of time tritium processing takes place while a wind was coming out of the west compass sector, or the number of instances where a relatively rapid onset of a significant precipitation event occurs while tritium processing is in progress.

By implementing these analytical strategies, SRBT will begin to build a data set over time that may permit a relatively meaningful quantitative analysis of the many factors that are expected to influence the concentration of tritium in facility runoff.

As a final point of emphasis, we reiterate that the radiological impact on humans or the environment of downspout water from SRBT over the last two years is essentially zero, as demonstrated by the continuing decrease in groundwater tritium concentrations over the past several years, and the fact that this water is not viewed as a significant contributor to effective doses to humans, nor to the risk to ecological receptors.

Comment:

On May 12, 2021, SRBT requested to defer conducting their full-scale emergency exercise from June 2021 to September/October 2021, in consideration of the ongoing COVID-19 pandemic and in consultation with PFD [12]. SRBT's request to defer was granted on May 17, 2021 [13].

CNSC staff concluded that from a technical safety standpoint, this request would not increase the fire response risk level at the SRBT facility.

Requested Action:

As per the latest correspondence from CNSC staff on May 17, 2021 [13], CNSC staff request that SRBT provide the CNSC with advance notice of the exercise date including information such as the scenario details, participant list and exercise schedule.

As requested in previous correspondence [6], SRBT shall provide CNSC staff with advance notice of the exercise date, as well as all pertinent details as requested.

We remain on track to hold this exercise in the September - October 2021 timeframe.

> ***Comment:***
>
> *Information was provided pertaining to SRBT's communication and engagement with the Algonquins of Pikwakangan First Nation and the Algonquins-Anishinabeg Nation. However, it is unclear if SRBT conducted communications with other Indigenous groups with interests in the area.*
>
> *CNSC staff are open to meeting with SRBT to provide more information about the Indigenous groups with interests in the area that SRBT should consider as a target audience for SRBT's PIDP.*
>
> ***Requested Action:***
>
> *SRBT is requested to provide a list of the Indigenous groups SRBT has identified as part of their key target audience for the public information program, including further clarification on any communication or engagement with the Algonquins of Ontario and the Métis Nation of Ontario.*
>
> *SRBT should include this information in future compliance reports, including which Indigenous groups have been contacted, any concerns raised by Indigenous groups, and SRBT's plans for engaging each Indigenous group moving forward. If no communications, outreach or engagement was conducted with any of, the identified Indigenous groups as part of SRBT's PIDP, please state that in future annual reports and explain why.*

As noted, details on the indigenous engagement activities undertaken by SRBT in 2020 are summarized in section 5.1.1 of the ACR, and are repeated here for completeness:

> *"In 2020, letters were sent to the Algonquins-Anishinabeg Nation and to the Algonquins of Pikwakanagan with an invitation to contribute to SRBT's Environmental Risk Assessment.*
>
> *The letter described who we are, what we do, the details of the project, how they can contribute and collaborate on the project and the next steps. We have only received a response from the Algonquins of Pikwakanagan, who did contribute and provide knowledge and access to their land."*

As well, with respect to SRBT's Environmental Monitoring Program, and the execution of the Environmental Risk Assessment, SRBT completed a supplementary study in collaboration with the Algonquins of Pikwakanagan First Nation, as described in section 4.3.1.13 of the ACR:

"In close consultation and collaboration with the Algonquins of Pikwakanagan First Nation (APFN) near Golden Lake, Ontario, SRBT performed the following environmental sampling and analysis activities in 2020:

- *Two passive air sampling stations were set up at the western boundary of the community. The samplers were deployed for two months, measuring the average concentration of tritium in the air at this location. Samples were analyzed after each month.*

- *A precipitation collector station was also set up at this location for two months. The collected sample was analysed after each month.*

- *Samples of vegetation in the community were collected by SRBT staff, with the assistance of community knowledge holders. The selected plants were chosen due to their cultural significance and importance to the APFN. The samples were analyzed by the same third-party laboratory that analyzes residential and commercial produce samples as part of SRBT's routine EMP.*

The results of this supplementary study are detailed in the SRBT Environmental Risk Assessment report, which is published on our website."

As stated in previous correspondence on this subject [7], SRBT plans on submitting a revision to our Public Information Program to CNSC staff by September 30, 2021. SRBT confirms that this revision will incorporate a list of the indigenous communities that are included in our target audience.

The information provided in future ACRs will also continue to be improved and expanded upon, as Indigenous outreach activities are integrated into activities conducted as part of our Public Information Program.

We trust that with this letter and additional information, we have addressed CNSC staff comments on the 2020 edition of our ACR, and we look forward to incorporating the noted improvements into our future ACRs.

Further to our response to CNSC staff comments, after submission of the ACR on March 31, 2021, SRBT identified two rows of transcription errors in the table of well level measurements that was provided as Appendix R in our original submission. A corrected version of Appendix R is enclosed with this letter for CNSC records.

As a public information initiative, SRBT intends to post this letter to the Annual Compliance Reports section of the SRBT website, as an addendum to the 2020 ACR.

Should you require any additional information, please do not hesitate to contact me at any time.

Best Regards,

Stephane Levesque
President
SRB Technologies (Canada) Inc.

cc: A. McAllister, CNSC
R. van Hoof, CNSC
R. Fitzpatrick, SRBT
K. Levesque, SRBT
J. MacDonald, SRBT

References:

[1] Letter from L. Posada (CNSC) to S. Levesque (SRBT), *CNSC Staff's Review of SRB Technologies (Canada) Inc.'s 2020 Annual Compliance Report,* dated June 24, 2019. (CNSC e-Doc 6585999).

[2] Environmental Risk Assessment – SRBT, Revision B (April 2021). http://srbt.com/Environmental%20Risk%20Assessment%20-%20Revision%20B%20-%20April%202021.pdf

[3] Comprehensive Report – Groundwater Studies at the SRB Technologies Facility, Pembroke, ON (January 2008). http://srbt.com/2008-groundwater.pdf

[4] Letter from S. Levesque (SRBT) to M. Leblanc (CNSC), *Application for the Renewal of SRB Technologies (Canada) Inc. Nuclear Substance Processing Facility Operating Licence NSPFOL-13.00/2022,* dated June 30, 2022. http://srbt.com/SRBT%20Licence%20Renewal%20Application%20-%20June%2030,%202021.pdf

[5] Letter from S. Levesque (SRBT) to L. Posada (CNSC), *SRBT Response to CNSC Staff Review of 2019 Annual Compliance Report,* dated July 29, 2020. http://srbt.com/Addendum%20to%20the%202019%20Annual%20Compliance%20Report.pdf

[6] Letter from L. Posada (CNSC) to S. Levesque (SRBT), *CNSC Staff Review of SRB Technologies (Canada) Inc.'s Request for Rescheduling Emergency Exercise – 2021,* dated May 17, 2021 (CNSC e-Doc 6563970).

[7] Email from J. MacDonald (SRBT) to L. Posada (CNSC), *RE: SRBT Licence Renewal Application – Initial Comments on Sufficiency Review,* dated July 7, 2021.

Enclosures:

[A] Appendix R (Corrected), 2020 SRBT ACR

COMPILATION OF WATER LEVEL MEASUREMENTS FOR 2020

	MW06-1	MW06-2	MW06-3	MW06-8	MW06-9	MW06-10	MW07-11	MW07-12	MW07-13	MW07-15	MW07-16	MW07-17	MW07-18	MW07-19
Easting	335449	335478	335363	335464	335401	335408	335478	335465	335448	335403	335393	335392	335387	335378
Northing	5074615	5074578	5074535	5074590	5074605	5074506	5074576	5074588	5074616	5074605	5074599	5074599	5074595	5074587
TOP Elevation (m)	130.99	130.03	133.09	130.30	131.15	131.32	130.06	130.41	130.92	130.84	130.98	131.08	131.23	131.61
GS Elevation (m)	130.17	129.24	132.32	129.58	129.86	130.24	129.15	129.58	130.03	129.93	130.16	130.16	130.37	130.79
Well Diameter (m)	0.051	0.051	0.051	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.051	0.032	0.032
Well Depth (m)	5.165	5.330	6.130	6.700	5.930	7.770	7.215	7.450	6.615	7.230	7.050	14.610	7.250	7.400
Stick-up (m)	0.820	0.788	0.767	0.720	1.290	1.077	0.905	0.835	0.893	0.910	0.822	0.915	0.868	0.815
dd/mm/yy	All levels expressed in metres above sea level (masl)													
08-Jan-20	127.38	126.93	127.04	125.98	127.08	126.52	126.06	125.95	125.66	126.45	126.34	121.31	126.32	126.44
05-Feb-20	127.05	126.79	127.05	125.80	126.56	126.28	125.88	125.72	125.39	126.13	126.07	121.20	125.99	126.32
05-Mar-20	127.61	126.83	127.05	125.91	126.63	126.38	125.92	125.91	125.71	126.26	126.22	120.92	126.25	-
02-Apr-20	129.14	129.41	130.64	128.27	129.75	129.80	128.21	128.32	128.32	129.24	129.77	124.78	129.92	130.07
05-May-20	129.00	128.05	129.97	128.08	129.60	129.34	128.08	128.11	128.04	129.32	129.08	124.50	129.43	129.56
01-Jun-20	128.88	127.84	130.26	127.65	129.05	129.02	127.66	127.67	127.60	128.83	128.77	123.34	128.78	128.93
01-Jul-20	128.55	127.53	127.74	126.91	128.44	127.77	126.95	126.90	126.79	127.84	127.74	122.53	127.70	127.45
04-Aug-20	128.69	127.29	128.06	126.75	127.92	127.65	126.81	126.77	126.76	127.82	127.69	121.81	127.53	127.63
01-Sep-20	128.93	127.95	129.66	127.66	129.11	128.76	127.70	127.68	127.56	128.75	128.69	123.54	128.73	128.89
04-Oct-20	128.71	127.77	127.90	127.11	128.55	127.92	127.26	127.09	126.93	128.02	127.92	122.56	127.85	127.96
04-Nov-20	128.59	128.02	128.31	127.20	128.55	127.92	127.88	127.18	126.96	127.99	127.89	122.90	127.77	128.03
03-Dec-20	128.91	128.40	130.22	127.76	128.64	128.90	127.79	127.78	127.57	128.82	128.79	123.48	128.93	129.08

	MW07-20	MW07-21	MW07-22	MW07-23	MW07-24	MW07-26	MW07-27	MW07-28	MW07-29	MW07-31	MW07-32	MW07-34	MW07-35	MW07-36	MW07-37
Easting	335296	335522	335472	335492	335519	335357	335354	335352	335384	335471	335517	335393	335354	335338	335468
Northing	5074616	5074584	5074584	5074560	5074530	5074567	5074611	5074612	5074592	5074583	5074530	5074591	5074613	5074629	5074589
TOP Elevation (m)	130.70	129.51	130.25	130.04	129.03	132.42	132.89	132.71	131.09	130.16	128.86	131.12	132.89	133.10	130.06
GS Elevation (m)	129.85	128.78	129.05	129.29	128.22	131.85	132.02	132.04	130.57	129.38	128.23	130.71	132.16	132.31	129.47
Well Diameter (m)	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032
Well Depth (m)	7.820	7.580	7.465	5.905	6.525	7.310	8.330	14.400	13.000	13.240	13.090	9.110	9.390	9.330	8.590
Stick-up (m)	0.850	0.730	1.200	0.750	0.810	0.570	0.870	0.670	0.520	0.780	0.630	0.410	0.730	0.790	0.590
dd/mm/yy	All levels expressed in metres above sea level (masl)														
08-Jan-20	125.29	124.24	125.85	126.66	126.00	126.12	125.55	122.32	121.35	120.29	120.28	125.39	125.35	124.82	126.08
05-Feb-20	124.66	124.14	125.67	126.52	125.90	126.00	125.36	121.15	121.16	120.22	120.10	125.19	125.20	124.71	125.96
05-Mar-20	124.90	124.21	125.77	126.61	125.98	126.02	125.52	120.93	120.96	119.96	120.14	-	125.27	124.74	126.04
02-Apr-20	128.05	127.61	128.20	128.40	127.48	130.73	130.05	124.93	124.80	125.38	125.36	128.89	129.62	128.66	128.43
05-May-20	127.58	127.08	128.00	128.25	127.34	129.84	129.34	124.34	124.33	124.02	124.02	128.48	128.99	128.04	128.23
01-Jun-20	127.07	126.19	127.56	127.95	127.08	129.09	128.41	123.38	123.39	122.52	122.49	127.73	128.04	126.87	127.79
01-Jul-20	126.02	124.96	126.85	127.38	126.44	127.55	127.16	122.51	122.54	121.51	121.49	126.61	126.79	125.55	127.02
04-Aug-20	125.78	124.74	126.64	127.24	126.36	127.13	126.69	121.93	121.94	120.50	120.52	126.37	126.37	125.30	126.89
01-Sep-20	127.12	126.74	127.59	128.05	127.14	129.18	128.29	123.49	123.49	123.26	123.26	127.62	127.91	126.70	127.81
04-Oct-20	126.15	125.52	127.00	127.70	126.83	127.59	127.15	122.58	122.59	121.70	121.70	126.67	126.80	125.53	127.21
04-Nov-20	126.44	126.17	127.07	127.78	126.89	127.98	127.29	122.84	122.86	122.50	122.42	126.74	126.92	125.69	127.30
03-Dec-20	127.14	127.19	127.59	128.18	127.17	129.77	128.31	123.39	123.38	123.54	123.54	127.63	127.88	126.53	127.89

Directorate of Nuclear Cycle and Facilities Regulation

File No.: 4.02.02
e-Doc 6622593

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August 16, 2021

Mr. Stephane Levesque
President
SRB Technologies (Canada) Inc.
320-140 Boundary Road
Pembroke, ON K8A 6W5

Subject: CNSC Staff's Review of SRB Technologies (Canada) Inc.'s Response to CNSC Staff Comments to the SRBT 2020 Annual Compliance Report

Dear Mr. Levesque,

Canadian Nuclear Safety Commission (CNSC) staff have reviewed SRB Technologies (Canada) Inc.'s (SRBT) responses [1] to CNSC staff's review [2] of SRBT's 2020 Annual Compliance and Performance Report (ACPR) [3]. CNSC staff conclude that the information provided is acceptable, and have no further comments.

Should you require any further information or have any questions regarding this letter, please do not hesitate to contact me.

Sincerely,

Lester Posada
Project Officer
Nuclear Processing Facilities Division

c.c.: R. Fitzpatrick, J. MacDonald – SRBT
A. McAllister, R. van Hoof –CNSC

References:

[1] Letter from S. Levesque (SRBT) to L. Posada (CNSC), subject: *SRBT Response to CNSC Staff Review of 2020 Annual Compliance Report*, July 19, 2021 (e-Doc 6608910).

[2] Letter from L. Posada (CNSC) to S. Levesque (SRBT), subject: *CNSC Staff Review of SRBT 2020 Annual Compliance Report*, June 24, 2021 (e-Doc 6585999).

[3] Letter from S. Levesque (SRBT) to L. Posada (CNSC), subject: *Submission of SRBT Annual Compliance and Performance Report - 2020*, March 31, 2021 (e-Doc 6527659).