

SAFETY, HEALTH, AND SECURITY COMMITTEE MEETING AGENDA AND MINUTES

ENVIRONMENTAL HEALTH AND SAFETY
WASHINGTON STATE UNIVERSITY
PULLMAN, WA 99164-1172
509-335-3041

See 2.12 for instructions or contact EH&S for assistance.

1. MEETING DATE July 23, 2026	2. CAMPUS, COLLEGE, AREA, DEPARTMENT, PROGRAM, BUILDING, OR WORK UNIT COMMITTEE OR MEETING NAME Nuclear Science Center		
3.a. ELECTED CHAIR NAME Zachariah Heiden	3.b. ELECTED CHAIR E-MAIL ADDRESS zachariah.heiden@wsu.edu	3.c. ELECTED CHAIR TELEPHONE 509-335-0936	

4. MEMBERS (In the designation column, indicate "E" for employee, "S" for student, "M" for management representative.)

NAME	DEPARTMENT	DESIGNATION	PRESENT	ABSENT
Zachariah Heiden	Nuclear Science Center	E	X	
Corey Hines	Nuclear Science Center	M	X	
Cody Ingraham	Nuclear Science Center	E		X
Layla Lumzer	Nuclear Science Center	E	X	
Billy Schmuck	Nuclear Science Center	E	X	
Trevor Dillon	Nuclear Science Center	S	X	
Ethan Irish	Nuclear Science Center	S	X	

5. GUESTS

NAME	DEPARTMENT	TITLE

AGENDA AND MINUTES (Attach additional sheets as needed.)

6. INCIDENT REPORTS AND SUPERVISOR'S ACCIDENT INVESTIGATION REPORTS RECEIVED (If yes, describe. Include recommendations to prevent future incidents and accidents. See SPPM 2.24 and 2.26.)	☒ YES	☐ NO
Discussed safety concerns that arose since the last meeting and progress on addressing the three open safety concerns brought to our attention. One (from 7/3/24) is being worked on by Andersen Construction (installed on July 30th), #13264 highlights the poor state of the gloves on the glovebox in Dodgen 121, RSP is working to clean the glovebox, and Dr. Guo was notified on July 28th that his User Agreement is being amended to not include 121 and 120/120A. #13854 highlights the chemicals in Dodgen 221, EH&S will be coming early August to deal with any remaining hazards after a lab cleanup. No incident reports were discussed at the July 23rd meeting, but at the July 23rd meeting the committee recognized that there were incident reports that needed to be completed and be discussed. A second brief Level 4 Safety Committee meeting was scheduled for July 29th to discuss the two completed incident reports from 2026. Five incident reports are tabled for the October meeting until they have been completed. Incident Report #2026-2: Heald Hall break-in & discovery of additional rad material was elevated to Level 3 Incident Report #2026-3: Boiler problems and flood was elevated to Level 3		

SAFETY, HEALTH, AND SECURITY COMMITTEE MEETING AGENDA AND MINUTES (cont.)

AGENDA AND MINUTES (cont.) (Attach additional sheets as needed. See SPPM 2.12 or contact EH&S for assistance.)

7. ACCIDENT PREVENTION PLAN REVIEW, UPDATES, AND IMPROVEMENTS

(Describe which part of the unit's accident prevention plan was evaluated. Include any recommendations to the administrator for improvement. See SPPM 2.10.)

A modification to Chapter 4 THSP, Section 4.3 Work Processes to include the following statement:

For procedures that are new to the worker, work that is research in nature where the result is uncertain, or the supervisor would like the employee to assess the risks of a task/procedure, a Risk Assessment must be completed and approved by management, prior to completion of the task/procedure.

was approved unanimously by the committee.

8. SAFETY INSPECTIONS PERFORMED? (A minimum of one inspection per year is required for all workplaces.)

(If yes, attach a copy of each completed safety inspection checklist. See SPPM 2.50.)

☐ YES

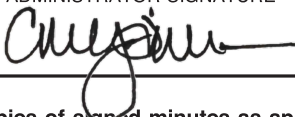
☒ NO

9. SAFETY, HEALTH, AND SECURITY TOPICS DISCUSSED AND PROMOTED (Describe how each topic was promoted.)

The Risk Assessment form was discussed and approved. A statement regarding its use was approved and added Chapter 4 of the Total Health and Safety Plan.

10. OTHER SAFETY, HEALTH, OR SECURITY TOPICS DISCUSSED

- An update on chemical inventory was provided, followed by a discussion of EH&S roll out of chemical inventory on EHSA.
- NSC to start discussion with USTUR to transfer samples and clean up Dodgen 119
- Barcoding of consumables in Quartz was demonstrated
- Training modules in Percipio were discussed, and the Research Team is going to spearhead what training looks like at the NSC and will be a discussion topic at the next meeting
- NSC User Agreement will now contain a 48 hour limit for PI's before NSC staff intervene to address safety concerns
- Chemical Hygiene Plans are due for review by next meeting
- A set meeting cycle (big topic to be discussed at each Level 4 Safety Meeting) was discussed and approved

SUBMITTED BY NAME Zachariah Heiden		DATE SUBMITTED TO ADMINISTRATOR July 30, 2026
ADMINISTRATOR NAME AND TITLE Corey Hines, Director	ADMINISTRATOR SIGNATURE 	DATE 7/30/2026

Route copies of signed minutes as applicable:

Level 3 SHS committees:

Route to Level 2 Steering Committee, Level 4 SHS committee chairs, and Level 3 elected co-chair.

Level 4 SHS committees:

Route to Level 3 elected co-chair and Level 4 chair.

Level 4 work unit safety meetings:

Route to Level 4 SHS committee chair and work unit lead.

Level 4 Safety Committee Meeting Agenda

July 23rd, 1:00 pm, Dodgen 218

- 1) Reported Safety Concerns Update
- 2) Other Safety, Health, and Security Topics
 - a. Chemical Inventory Update
 - b. Risk Assessment Discussion
 - c. Quartz Barcodes (Layla)
 - d. Training in Percipio (Billy)
 - e. NSC Laboratory Safety Program (nsc.wsu.edu/nsclabs/)
 - f. Glovebox in Dodgen 121 Update
 - g. EHSA Update (Billy)
 - h. NSC User Agreement
 - i. Update CHP's prior to next meeting
 - j. Meeting Cycle
 - i. Q1 – THSP Updates
 - ii. Q2 – Chemical/RAM Inventory/EHSA
 - iii. Q3 – PI Lab Documentation Updates
 - iv. Q4 – Lab Inspections & Elections

INCIDENT REPORT NO. 2026-2

EVENT CLASSIFICATION INFORMATION	
Event Type	Non-classified incident: incident does not rise to a level of Safety Event
Event Location	Heald Hall 301A
Date/Time Start	2/9/2026
Date/Time End	2/27/2026
Reportable	NSC Management, Reactor Safeguards Committee, Level 4 Safety Comm.
RCA Performed	Yes
EVENT DESCRIPTION	
In mid-January 2026, Corey Hines (Director, SRO, NSC) was approached by Dr. Asaph Cousins (Professor, School of Biological Sciences) for assistance with cleaning out Heald Hall 301A, a radioactive materials lab. Cousins was quoted ~\$10k by the Radiation Safety Program to perform a cleanout, which Cousins could not afford. Hines directed Clark Filip (Reactor Manager, SRO, NSC) to visit 301A and estimate the cost of NSC staff performing the cleanout, while around the same time on 1/13/2026 Hines asked Maria Hernandez, AVP of OR Operations and owner of the WSU RSP team for swipes and surveys and a material inventory of the space. Based on Filip's assessment and the documentation sent to Hines, a quote of \$2,544.16 was provided to Cousins by Hines on 1/26/2026, which Cousins accepted. 301A had long been used as a radioactive materials (RAM) laboratory by the current Authorized User (Cousins) and the previous Authorized User (Edwards). P-32, S-35, C-14, and H-3 had been used for plant uptake experimentation going back to the 1970s. 301A has two fume hoods, two freezers, sink, countertop and drawer space, and shelf space. John Sullivan (Health Physicist, RSP) stated in a 1/12/2026 email that as of October 2025, the only known radioactive material left in 301A was a sealed source in a single liquid scintillation counter (LSC) in the lab, and that he would remove the source in the near future. Beginning on 2/9/2026, Filip directed Layla Lumzer (Reactor Operations Engineer, RO, NSC) to put together a cleanup kit and perform the cleanout with a licensed student timeslip. Health Physics surveys were performed systematically in the lab. Non-contaminated (cold) articles were moved to a neighboring lab for eventual disposal. RAM labels on articles were defaced with black "Sharpie." On 2/12/2026, Lumzer called Filip to report an apparent break-in of 301A. Filip directed Lumzer to leave the building and call WSU PD, and to assume contamination may have been spread by the apparent theft. Filip arrived at Heald and met with WSU PD to begin the investigation into the apparent theft. During initial questioning and interviewing of Lumzer and Ethan Irish (Technical Assistant, RO, NSC), WSU PD Officer Whitman asked contractors coming out of Heald Hall with demolition tool whether they knew anything about the apparent break-in. The contractors told Whitman they were surveying the building for lead-based paint and were directed to break into 301A by Matt McKibben of WSU EH&S. The door was replaced on its hinges and Sullivan installed a padlock on the door of 301A to secure the lab. At that point, the cleanout of 301A continued. On 2/17/2026, Lumzer told Filip another LSC was discovered and was being used as countertop space. Lumzer said the LSC contained calibration standards (C-14, H-3, and blank) and it was	

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unknown whether the LSC sealed source (Cs-137) was still installed. Filip notified Sullivan, Rey McGehee (Radiation Safety Officer, RSP), and Levi O'Loughlin (Associate Director, Office of Research Assurances) of the discovery of the second LSC via email. Sullivan replied that he would pick up the calibration sources and sealed source if present.

On 2/20/2026, Filip notified Cousins, Sullivan, McGehee, and O'Loughlin that the 301A cleanout was substantially completed. Filip also mentioned that to complete the cleanout, remaining chemicals in the south fume hood would need to be collected by EH&S in order to survey the fume hood. Sullivan replied that the chemicals were removed.

EVENT TIMELINE	
Date / Time	Description
1/13/2026 / 1300	Hines directs Filip to coordinate with Cousins to visit 301A and estimate costs of NSC performing cleanout of the RAM lab.
1/14/2026 / 0900	Filip and Lumzer meet with Cousins at 301A to estimate the work.
1/25/2026 / 1000	Hines provides Cousins with quote for 301A cleanout.
2/9-2/11/2026	Lumzer and licensee timeslips begin cleanout work. Approximately 4 hours per day.
2/12/2026 / 0930	Lumzer discovers apparent 301A break-in. WSU PD investigate and determine contractors surveying for lead based paint forced the door open under direction from EH&S.
2/17/2026 / 1145	Lumzer notifies Filip that a second LSC with calibration and potentially sealed source was discovered. Filip notifies RSP.
2/13-2/26/2026	Lumzer and licensee timeslips continue and complete cleanout work.
2/26/2026 / 1500	Filip notifies Cousins and RSP that the cleanout is complete.
DEVIATION(S) FROM EXPECTED SEQUENCE, POLICY, AND/OR PROCEDURES	
RPPM 3.2 states that the Radiation Safety Committee (RSC)...maintains surveillance over activities involving [use of ionizing radiation at WSU.] The Radiation Safety Committee either was not aware of the need to cleanout 301A or took no enforcement action on the School of Biological Sciences or RSP to cleanout the lab. RPPM 3.3 states the Office of Research Assurances implements the radiation safety program...[and] radiation safety services. RSP quoted Cousins \$10k for 301A cleanout costs, which was of Cousins' budget. RPPM 4 states the RSP provides radiation safety training for individuals who work with or around radioactive materials. While Filip was estimating the lab space, Cousins stated he did not have the expertise to safely and properly cleanout the lab. RPPM 9.10 states that "all LSCs are tracked by the Radiation Safety Program." RSP had no knowledge of the older, additional LSC that was discovered in 301A RPPM 13.1 states that "radioactive material shall be secured against unauthorized access or removal." McKibben authorized forced entry into a signed RAM lab by unqualified contractors surveying for lead based paint.	

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RPPM 18.1 states "AUs...needing to have equipment or laboratory areas cleared for...disposal must contact the RSP. Cousins contacted RSP and was given a ~\$10k quote for cleanout with no clearly defined path forward to cleanout the lab.

BPPM 60.38 addresses faculty or staff departure and vacating university areas. The author could find no evidence this policy was followed. As a result the lab was never cleaned out and LSCs were essentially abandoned.

IDENTIFICATION OF ROOT CAUSE(S)

The 301A lab was left in a condition requiring significant cleanout of waste and materials, many of which wore RAM labels; an indication the School of Biological Sciences and RSP did not enforce policy of a departing faculty member. The LSC that was discovered contained RAM calibration sources and a sealed source and was not accounted for on RAM or LSC inventories. Cousins, the AU, stated he did not have adequate training or expertise to cleanout the lab. 301A experienced a forced entry resembling a burglary/attempted theft as a result of a EH&S staff member who had no authority to authorize a forced entry, nor asked questions of the contractors as to any labeling on the lab door.

The problem of the 301A lab was known for quite some time, years before the scheduled demolition of the building was to take place. This problem remained without any feasible mechanism for resolution by RSC and RSP.

A process or procedure to cleanout 301A was unknown or unclear to Cousins, indicating Cousins did not have the proper radiation training as an AU, RPPM 19 is/was unclear, and/or RSP was unwilling to provide Cousins direction to guidelines in RRPM 19.

Schools and Departments across the Pullman campus are not enforcing WSU policy for departing faculty members resulting in accumulation of RAM waste, RAM machines, and RAM material without an effective enforcement or funding mechanism to resolve the problem.

Central communication through a project manager of the Heald Hall demolition is not apparent and/or present to coordinate effective and safe surveys for hazardous material identification such as lead based paint. In this case EH&S staff did not understand and/or ask RSP if RAM labs were still present in Heald Hall or EH&S assumed incorrectly that all RAM labs had been decommissioned.

CORRECTIVE ACTIONS

None by NSC, however it is suggested that in the absence of RSP enforcement or RSC oversight, institutional level leadership must ensure that radiation protection controls are strengthened for legacy RAM waste, RAM machines, and RAM materials via RSC, which then must maintain stricter oversight of the RSP/RSO.

ADDITIONAL DOCUMENTS

None.

NSC MANAGEMENT REVIEW

NSC management has participated in the incident report, remediation activities, root cause investigation, and corrective actions.



Clark J. Filip, Reactor Manager

Digitally signed by Clark J. Filip
Date: 2026.02.27 14:20:58
-08'00'



Corey Hines, Director

INCIDENT REPORT NO. 2026-3

EVENT CLASSIFICATION INFORMATION	
Event Type	Non-classified incident: incident does not rise to a level of Safety Event
Event Location	Dodgen Room 10 (Boiler Room)
Date/Time Start	1/2026
Date/Time End	Ongoing
Reportable	NSC Management, Reactor Safeguards Committee, Level 4 Safety Comm.
RCA Performed	Yes
EVENT DESCRIPTION	
Beginning in January 2026, work began on Dodgen Room 10 (Boiler Room) as part of an effort to provide potable water to the drinking fountain and bathroom hand sinks. Prior to the work, Dodgen did not have adequate backflow prevention to isolate non-potable fixtures such as laboratory sinks from the rest of the plumbing system. Initial efforts to install backflow prevention focused on removing obsolete equipment and pipes or relocating useful equipment to other areas of the Boiler Room. By February, the new backflow prevention manifold is completed by MacDonald Miller (MM) personnel. Filip reminds MM personnel often that the air compressor is a piece of critical infrastructure equipment to the operation of the reactor and to be mindful of the air compressor controls. Filip is directed by Hines to drain any water in the liquid radioactive waste hold-up tanks ahead of the backflow manifold into the water system, as there could be significant water draining from the pipes. Following procedure, approximately 2600 gallons is drained from the tanks by 3/9/26. On 3/10/26, domestic water to the building is shutdown and the initial tie in of the backflow manifold is made. Steve Smith, Andersen Construction, notifies the project management email chain that the flushometers on the bathroom fixtures are "finicky." Filip checks the BP control panel to find the system is off. Filip questions if this is the reason for the finicky toilets. Isaac Bass, MM, replies to the email chain that the BPs would remain off until 3/18/26 when the rest of the backflow manifold was scheduled to be tied into the water system. Filip replies that without the BPs, pool make-up water is essentially off. Hines directs Filip to field verify this. Filip investigates and affirms there is not adequate water pressure for the pool make-up water system to function properly. Jeremy Griffin, WSU Fac Ops, mobilizes Fac Ops plumbing technicians to verify the function of pool make-up water system. The solenoid and backflow preventers are functioning properly, however, there is not adequate pressure to open the check valves on the backflow preventer. Filip decides to manually fill the pool make-up system throughout the day and the reactor is started. Shortly after, the cooling tower begins to starve for water. There is not adequate pressure for the make-up water to overcome the blowdown system. The reactor is shutdown. Throughout the rest of the day, MM personnel change the configuration of the pressure sensing of the BP system and adjust the pump speeds to provide adequate pressure to 201C. By the end of the day, adequate pressure is restored to the pool make-up water system for it to work properly. On 3/11/26, the BPs are adjusted further so there is adequate pressure to the cooling tower make-up water system.	

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On 3/12/26, MM completes the backflow manifold tie into the water system.

On 3/13/26, Filip randomly checks the Boiler Room to find approximately 2" of water on the floor. Lockie, who is in the Penthouse for a roof leak, isolates BP1 to find a valve that failed from corrosion and the increased water pressure. Water is running into a floor drain believed to drain to the liquid radioactive waste hold-up tanks.

Lumzer checks on the facility on Saturday 3/14/26 and Sunday 3/15/26. Lumzer finds the BP control panel to be in alarm. Layla checks on water supply pressure in 201C and determines there is still adequate pool make-up water pressure.

On Monday 3/16/26, Fac Ops determines BP2 is seized up, likely as a result of the BP control panel not alternating between BP1 and BP2 every 24 hours. Fac Ops removes the pump and is able to repair and return the pump to service on 3/17/26.

Later on 3/16/26, MM personnel determine that the pressure relief valve on the building water pressure tank in the Boiler Room opened. The pressure relief valve was rated to 45 psi and the water pressure was increased to 60 psi, causing the valve to open as intended. The valve was replaced with a 100 psi valve later in the day (the tank is rated for 120 psi). It was also determined that the pressure tank was "waterlogged" preventing the pressure tank from functioning properly and placing increased strain, wear, and tear on the BPs. The pressure tank was drained of water and the internal air reservoir was refilled with air to the proper pressure.

On 3/18/26, water is discovered in the air pressure regulator to the transient rod air supply during the checkout. The water is drained from the regulator bowl and Filip investigates further. The air dryer in the Beam Room is functioning properly. Filip discusses with Lockie. Lockie determines the air compressor tank drain valve is unplugged and has been likely unplugged for several weeks. Lockie manually drains approximately 50 gallons of water from the air compressor tank. It is unknown who unplugged the drain valve or when. The accumulated water likely caused the air compressor to cycle more frequently, increasing wear and tear. Hines reviews the air compressor maintenance log to find it has not been updated since 2023.

Later on 3/18/26, Filip finds the Boiler Room flooded again. A polyethylene water pressure line is ruptured as a result of melting on BP1. BP1 is not shutting off when there is no water demand causing the water to eventually boil and overheat metal surfaces.

EVENT TIMELINE	
Date / Time	Description
3/9/26 / NA	Filip and Lumzer drain the liquid radioactive waste hold-up tanks according to procedure.
3/10/26 / 0500	Domestic water is shutdown to the building to tie in the backflow manifold into the water system.
3/10/26 / 0800	Tie in of the backflow manifold is complete. Filip determines there is not adequate water pressure to 201C for pool make-up or cooling tower make-up water.
3/10/26 / 0900	Fac Ops determines the pool make-up water system components are functioning properly. There is no adequate water pressure for the components to operate.
3/10/26 / 1100	The cooling tower begins to starve for water. The reactor is shut down.

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3/10/26 / 1645	MM changes pressor sensor locations and increases BP output. Adequate pressure restored to pool make-up water system.
3/12/26 / 0930	MM completes the final tie in work of the backflow manifold to the rest of the water system.
3/13/26 / 1400	Filip finds the Boiler Room flooded due to a valve failure on BP1. Lockie isolates BP1 and replaces the valve within the hour
3/15/26 / 1215	Lumzer checks on the facility over the weekend and notifies Filip and Hines that the BP control panel is in alarm.
3/16/26 / 0940	BP2 is found to be seized. BP2 is removed, repaired, and returned to service on 3/17/26.
3/16/26 / 1300	The Boiler Room pressure tank pressure relief valve is replaced. The waterlogged tank is drained and the air reservoir refilled.
3/18/26 / 0830	Water discovered in the air pressure regulator to the transient rod system. Lockie finds the water/condensation drain pump on the air compressor is not plugged. Lockie drains approximately 50 gallons of water from the air compressor tank.
3/18/26 / 0930	Filip finds the Boiler Room flood again due to a melted water pressure line.
3/20/26 / 0800	Filip finds the pressure control valve to the boiler room pressure tank leaking.
3/23/26 / 0800	Filip finds water actively weeping from seal on BP2.
3/24/26 / 0800	Filip finds standing water on Boiler Room floor from an unknown source; likely one of the BPs.

DEVIATION(S) FROM EXPECTED SEQUENCE, POLICY, AND/OR PROCEDURES

The Boiler Room is not currently outfitted with sensors for floods indicating failure of a critical infrastructure system. Many critical infrastructure systems are not connected reliably or not connected at all to the Building Automation System (BAS). It is unknown to the Dodgen Research (DRF) Facility tenants whether preventative maintenance (PM) is being conducted to established PM checklists and procedures. Note pads are present on some systems, but not all, and out of date.

PM 1028 W is a monthly air compressor PM. The receive auto tank was not tested for functionality as the DRF stated that it would take several weeks for the volume of water to accumulate in the receiver tank that was ultimately drained out.

PM 2038 A is an annual air compressor PM. It is unknown whether the checklist is being followed as there is no record of PM in the maintenance notepad.

PM 2028 A is a checklist for the domestic water booster pumps. The checklist is vague and does not account for PM to the VFDs. The BPs are supposed to automatically switch back and forth every 24 hours, however, this was not the case for quite some time. There is no record of PM being performed on the BP system.

PM 2198 is a checklist for the domestic water expansion/pressure tank in the Boiler Room. The PM is not detailed and there is no record of PM being performed on the pressure tank.

Board of Regents Policy Manual 04 states, "the University is expected to maximize the productivity of its real estate assets." Incomplete and substandard PMs to critical infrastructure systems is contrary to maximizing the productivity of real estate and assets. Deferred and/or incomplete PMs cost more money to the University in the long run.

IDENTIFICATION OF ROOT CAUSE(S)
MM did not make it clear the booster pumps would be kept shutdown, did not understand we needed the boosters for pool make-up water and cooling tower make-up water, and did not obtain a base level of pressure prior to the cut over from the existing system to the new backflow system. Facilities Operations is not holding maintenance mechanics accountable for noting PMs on systems causing excessive wear and tear. NSC senior management has requested maintenance records from Facilities senior management and has received no response. The University is not holding Facilities Operations accountable to maximize real estate and assets by enforcing PMs at the DRF.
CORRECTIVE ACTIONS
None on the part of NSC.
ADDITIONAL DOCUMENTS
None.
NSC MANAGEMENT REVIEW
NSC management has participated in the incident report, remediation activities, root cause investigation, and corrective actions.  Digitally signed by Clark J Filip Date: 2026.03.24 09:48:35 -07'00' Clark J. Filip, Reactor Manager  Digitally signed by Corey Hines Date: 2026.03.25 08:48:59 -07'00' Corey Hines, Director

SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
2/4/2023 1873 DODG-5	Water on the floor near the toilet and has been there for several days.	The water was coming from a leak in the toilet. The water was cleaned up and a work request put in with WSU facilities services (2023-018578). The repairs were completed on 3/2/2023.
3/15/2023 2098 FULM-B3	No eyewash or safety shower is available in Fulmer B3. Work request for quote has been submitted.	Work request 2023-020047 under "estimating". Estimated at \$16,000. A portable eyewash has been ordered and has arrived. Portable eyewash was installed on February 13th, 2024 
3/17/2023 2099 FULM-40A	The faucet in the sink is leaking and the cold water valve was tightened so much that it cannot even be turned to be able to turn it on. Only hot water is functional out of the faucet currently. A work request has been submitted.	Work request 2023-020265 status is "open." New WR 2023-022486 on 4/17/2023. New WR 2023-022780 on 4/21/2023. FacOps will be coming after finals week to put in a new faucet. Completed 6/26/23.
3/17/2023 2114 DODG-201 Loading Dock	A reactor operator mentioned in passing that the uneven surface of the 201 loading dock area causes the pallet jack to tip a bit which has caused concern for how far the barrels on the pallets tip.	(3/22/2023) A training module "Pallet Jack Safety Training: NSC Safety Training Series" has approved by senior staff. Staff training on pallet jack safety is complete (5/2023).
3/17/2023 2115 DODG-201/106 IX PIT	Change out of the ion exchange resin requires the floor hatches to the pit to be open. in order to change out the resin, work has to be done within close proximity of the openings and there is no fall protection barriers just warning barriers on either end of the north pool room walkway where the pit is located.	Sarah Greer of WSU Occupational Health and Safety is helping determine the best solution and address the concern. Options include wearing harnesses, removable barriers, use of safety watch. Discussed during 3/24/2023 senior staff meeting and will have new tooling made that will enable closure of the IX lid without the pit floor cover open. 4/14/2023: Reactor Supervisor will design, test, and qualify procedure change for IX column changeouts. 9/22/2023: Hydrfab Northwest INC is currently designing and fabricating the tool. 10/18/2023: Received tool from Hydrfab. Have not been able to fully test its functionality.
3/21/2023 2123	At my last job in New York, they had outlined electrical safety standards in a corporate safety manual for working on switchboards and terminal boxes. That was New York	Discussed during 3/24/2023 senior staff meeting. Reactor supervisor will delegate to operations staff with Beadle as lead to

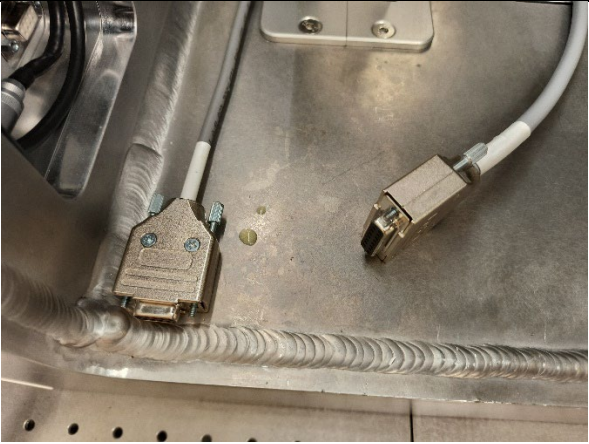
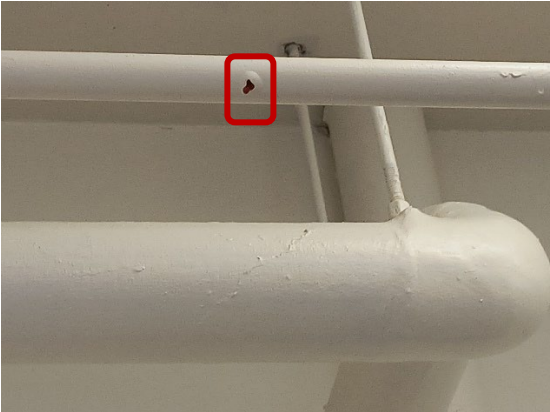
SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
DODG-201	and I don't know what exactly required them to have those electrical safety standards. As much as I don't want to add further restrictions to working on the reactor console, electrical safety is worth looking into to see if there are any that are required for the facility.	develop hold points and safety measures to be employed when working on the control console. Zach Heiden will coordinate and develop electrical hazard procedures for instrumentation at NUCS. Zach has met with Sarah Greer of WSU Occupational Health and Safety No electrical hazards were identified in NUCS. 10/21/2024: Waiting on a draft section from Bryan Chang to put into the Facility Safety Procedures. 2/17/25: A draft section has been placed into the Facility Safety Procedures and is awaiting vote by Level 4 Safety Committee. 8/28/25: A Total Health and Safety Plan including a section on electrical safety has been approved by the Level 4 Safety Committee
3/31/2023 2236 DODG-201	The safety latch on the overhead crane is missing. This is being reported now so that it can be tracked by the NSC Safety Concern Log.	Work request 2023-015411 Submitted 1/5/2023 Does a manual exist for part numbers? Status is "open." We received NEUP funding to replace the crane, the concern will remain open as long as the crane is in use. 8/28/25: The NEUP grant received a no cost extension through Sept 2026. Andersen Construction did a walk-through with the crane people for a crane replacement. 2/26/26: Crane replacement anticipated in May/June 2026 New crane installed with a safety latch.
4/7/2023 2265 DODG-ROOF	Exhaust stack on roof from fume hood is missing a guide cable. Stack is not stable. Located on NW corner on roof.	Work Request 2023-022029 submitted, status is "work complete."
5/3/2023 2375 DODG-101	Clogged sink.	Work Request Number: 2023-024030 Submitted: 5/3/2023 12:26 PM Completed: 5/22/2023
5/10/2023 2412 DODGEN	Cooling tower fan is noisy, possibly a bearing going out. Fan still operational.	This was determined to be solely a maintenance issue and not a safety concern and will be handled accordingly.

SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
8/4/2023 2900 DODG-101	There is a GM counter on the bench that is plugged into an outlet with an AC adapter. That AC adapter has exposed wiring and is not safe, and is not appropriate to use in that condition for safety-related functions.	The detector has been removed from service until it has a new power cord. Another GM has been put in 101 and there is already a hand and foot monitor in there for personnel use.
9/18/2023 NUCS-Fulmer Varian 500	Spinner has broken glass inside. I have left the spinner to the right of the computer monitor. 	User went to use the machine and found it left in that state. Further investigation needed to determine more information on the broken sample, what potentially caused it, and why it was left as it was. Spinner determined to be non-rad. Broken tube and glass removed. Machine is fully functional. A message about broken NMR tubes in the NUCS Core Facility was sent out to users.
9/29/2023 NUCS-Fulmer Bruker 500	An unlabeled Eppendorf tube containing an unknown material was found at the Bruker 500. 	Eppendorf tube determined to be non-rad. Eppendorf tube removed. Machine is fully functional. A message about bringing samples and completing experiments in the NUCS Core Facility was sent out to NMR users.
10/9/23 DODG-114	An unknown non-radioactive yellow liquid was found in the sample chamber of the SAXS.	The yellow liquid was determined to be non-rad with a GM. The yellow liquid was cleaned up with isopropanol on a Kim wipe. The area was also wiped with a wet Kim wipe and allowed to dry. Machine is fully functional. A message about cleaning up spills in the NUCS Core Facility was sent out to SAXS users.

SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
		
10/25/23 DODG- First Floor Hallway	While workers were moving a pallet of cargo in through the first floor loading dock using a motorized pallet jack, the load hit an electrical box mounted on the North hallway wall. The box broke open and exposed 120V AC wiring inside.	NSC staff responding couldn't find a breaker for those components, and so left the area cordoned off until a FacOps electrician could fully render safe the area, about 45 minutes later. The current issue is fully resolved, but future safety inspections should look for electrical boxes or conduit protruding from the wall in loading/unloading areas that could be damaged by moving cargo.
10/30/23 DODG- 150	Water dripping from pipe onto floor near TV and large table. 	Work Request submitted (#2024-009395). Was repaired 11/1/23 with a sleeve over the leak area. Work request (2024-009395) was closed by FacOps on 7/26/24. Sleeve still remains  New pipe was put in. Work Request closed 12/4/24
11/17/2023 DODG- 114	While conducting a building evacuation test, a researcher in 114 heard a garbled voice on building intercom during the warning for the upcoming test. Further, researcher did not hear the building evacuation siren in 114.	11/22/2023 – Building evacuation alarm was tested again. Employees systematically went to each room in the building, closed the door and assessed whether the alarm could adequately be heard, giving consideration to any extra noise produced by equipment in the room, if it were running. Results were tabulated on building maps. 12/22/2023 – Facility Operations responded to work request and adjusted 1 st floor hallway loudspeaker. Evacuation alarm is now audible where it was not previously.
1/3/2024 DODG- 101	Ceiling mounted HVAC unit is leaking onto lab equipment. Condensation is also accumulating on the ceiling and dripping onto the floor and lab bench work surfaces.	Facilities is replacing the unit. The replacement date is TBD.

SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
	While the heater was being removed, Fume hood #1 lighting was damaged and broken glass fell into fume hood. Fume hood fan also stopped working.	Work Request #2024-015258 submitted. July 23, 2024: Heater is in 101 and is waiting for prep work by facilities before install. 7/26/24 FacOps changed out the fume hood lighting with LEDs.
1/29/2024 DODG-101	Water pressure to 101 eyewash station is inadequate to flush eyes in an emergency. 	1/29/2024 - Work request 2024-016117 submitted and completed
2/12/24 DODG-121 #5266	Suspected contamination of the glovebox in Dodgen 121 with plutonium. Also, a suspected hole in one of the gloves on the glovebox. 	Draft memo sent to EH&S and RSO. EH&S and RSO worked with Dr. Guo and his students to clean it out. Are about 25% of the way completed as of July 23 rd , 2024. Met with Guo on February 26 th , 2025, about current and future gloveboxes. Have not heard anything after meeting. Current picture as of 8/26/25: 
4/11/2024	Tripping hazards in the Penthouse following Reactor Ventilation System Replacement.	The tripping hazards are structural to the building and cannot feasibly be removed. APEX spray painted the trip hazards orange.
4/11/2024	Motor/belt guard of Room 114 exhaust fan rattled loose in Penthouse exposing rotating motor shaft and belts.	Work request 2024-021639 submitted. Motor guard replaced. Rotating shaft still exposed. Work request 2025-001930. Rotating shaft guard installed on 7/24/2024.

SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
7/3/2024	201/101A/IX Pit floor hatches installed with structural material being removed by Facility Services for fitment of floor hatches. No gas shocks on the floor hatches as requested. Concern for leaning over the floor openings and floor hatches not being weight rated.	EH&S and Facility Services were on-site with NSC management to fully understand the safety concerns and develop paths forward to have the floor hatches modified or replaced so the fall concern and weight rating of the floor hatches is resolved. 2/26/26: Contract signed with Hydrafab. 7/21/26: Fabricated hatches were attempted to be installed, but the mechanical assist struts were too long. Will reinstall when new struts arrive. No ETA as of 7/22/26.
8/5/2024	Condensation dripping from control room ceiling in close proximity to the console.	Buckets placed under dripping AC ductwork and condensate lines temporarily. AC blown out to allow for condensate drainage by FacOps.
11/18/24 Fulmer B3 #7356	A user left the single crystal XRD filling liquid nitrogen into the cryodewar unattended. The vent tube from the cryogen dewar was also venting on electronics. NUCS Core Facility protocols indicate that all cryogen fills within the facility must not be left attended. The filling of the dewar was shut off and the user notified about the venting of cryogen on electronics and the absence during the fill.	User was retrained on the use of the single crystal X-ray diffractometer on 11/20/24.
11/18/24 Dodgen 114 #7360	Sudden metallic or plastic burning like smell in the room.	Dodgen 114, 116, 112, 110, 119, 117 were all investigated. The odor was the strongest in 114. Removed all of the panels on the SAXS and investigated the easyXAFS. Could not find the source of the odor. The odor dissipated and did not return when reinvestigated one hour later. Possibly due to FacOps work in the building. Has not occurred since, considered closed.
11/18/24 Fulmer B3 #7361	Cannot log out of simple in/out on NMR computer 	Restarted browser to provide users access to Simple In/Out. Retraining on the single crystal X-ray diffractometer with Vincent on 11/20/24
1/16/25 Dodgen 114 #7525	A user was measuring radioactive samples at the easyXAFS and not following the radioactive sample analysis procedure (no lab paper or radioactive sticker labels).	The user was called and returned to Dodgen about an hour after the phone call to remedy the situation.

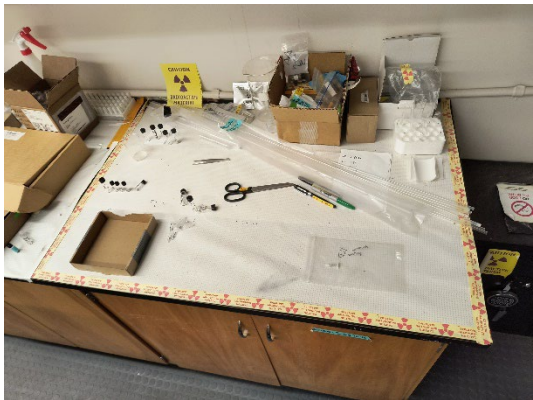
SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
		
2/5/25 Fulmer B3 #7644	One of the high pressure dewars was extremely iced up, hissing, and a small amount of liquid nitrogen was dripping out the liquid tap. I tapped the handle with a wrench and tightened it down with a gloved hand. The handle turned a little bit and the leaking and hissing stopped. Issue appears to be resolved, the dewar is currently sitting about 105psi. 	Tightened the liquid valve to stop leak.
2/27/25 Dodgen 101 #7856	Rm 101 eyewash station below the shower has low pressure.	A work request has been submitted. Eyewash piping was repaired and the eyewash under the shower was removed with the sink eyewash remaining.
3/6/25 Fulmer B3 #7958	The Rad NMR tube sample holder was placed in the case with the non-rad NMR tube holders. 	A pencil case is now used to store the Rad NMR tube sample holder and depth gauge.
5/6/25 Dodgen 101 #8480	SW fume hood in 101 has no exhaust flow.	Work request 2025-022608 submitted to repair the exhaust fan. The exhaust fan was repaired and proper flow was re-established.

SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
7/21/2025 Dodgen 21 #8964	There are two concerns related to gas bottle use and storage: 1: An attached regulator and cylinder appears to be tagged out with duct tape. Every possible scenario for this type of tag out is concerning: is the regulator damaged - if so, why is it still on the cylinder? Is the regulator stuck - if so, why hasn't help been sought?, Is the cylinder not in use (which is obviously the case) then why is a regulator on it at all? Is there cylinder damage? If so, then why is it in the building at all? 2: Very few, if any, of the cylinders are chained with sufficient tension to be certain that they cannot fall over. There may be sufficient slack for a cylinder to fall/slide. A quick test was made and the cylinder leaned to a sharp angle before being slowed to a full stop. I do not believe they are an immediate threat as the chains will reduce falling energy to a minimal level, but they do not meet the definition of secure in the WSU SPPMs or WACs. Only one picture was allowed to be attached, but there is also a loosely chained flammable cylinder on the east side of the room. This is urgent but appears to be in a metastable state. Correction may be performed through regular channels rather than on an emergency basis by non-lab personnel. 	The Guo Group has been notified. Graduate students have taken steps to properly secure the gas bottles individually and communication with Central Stores to fix the damaged regulator. The damaged regulator was removed and the cylinders have been chained up appropriately.
7/25/25 Dodgen 21 #9008	Unsealed Rad Material is sitting on the lab bench. It is in a designated rad area, but is just in the open, unsealed and unlabeled. Verified with a GM that it was radioactive. 	The Guo Group has been notified and the space was cleaned up. An email went out to the Guo group on 7/31/25 asking them to implement a tray system for RAM work. Picture of Rad area on 8/26/25:

SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
		 Picture of Rad area on 10/3/25 
8/4/25 Dodgen 121 #9076	There is an open (uncapped) bottle of nitric acid with something hanging out of it (not clamped) with no labels (see picture). 	The Guo Group has been notified of the safety concern at 3:30 pm on 8/4/25. The Guo group removed the items in the nitric acid, but the nitric acid bottle remained on the counter and did not address any of the items of concern listed in the message to the Guo group. Picture of area on 8/26/25:  No change as of 10/3/25. An email was sent to Dr. Guo and Eric Roalson.

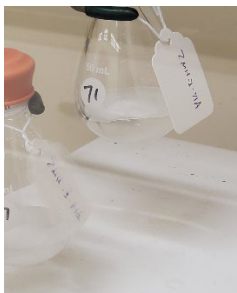
SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
		Was addressed by Guo lab on 11/13/25.
8/13/25 Fulmer B3 #9160	Liquid N2 dewar supplying house N2 had liquid N2 coming out of liquid dispenser port. 	Liquid dispensing valve was tightened, and liquid stopped coming out.
8/28/25 Dodgen B21 #9296	There is a sign saying that "Pu Materials are Inside" on a random desk outside of the Guo lab space (see pictures). It is unclear if the Pu materials are in the plastic bag next to it in an unsecured location or somewhere else. 	The sign was removed on 8/28/25 and we were assured by Dr. Guo that no Pu work has been done since 2019.
9/26/25 Fulmer B3	Unlabeled nmr sample within locker.	A message was sent out to users of the NUCS Core Facility. The sample was gone by the next day.

SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
		
10/9/25 Fulmer B3 #9656	A user was found removing unknown NMR tubes from the broken glass container near the DLS. 	Ethan told him to not remove the samples from the facility or the glass waste. A message was sent out to users of the NUCS Core Facility telling them to not remove unknown materials from waste containers.
10/10/25 Dodgen 214	Chemical synthesis or sample processing appears to be occurring in the Dodgen 214 fume hood where there is no access to a safety shower. (The closest shower requires exiting the lab and entering a different lab which is always locked). Furthermore, the samples under preparation are not labeled in a meaningful way. Research staff was notified at least 24 hours previous to this report on 10/9/2025 regarding the lack of labeling but it has not yet been addressed.	The samples were properly labeled, as indicated in the Chemical Hygiene Plan in Dodgen 214. The Chemical Hygiene Plan for Dodgen 214 was updated to address any confusion about labeling of samples. WSU EH&S informed us that a safety shower is only needed when there is potential for major portions of an employee's body to contact corrosives, strong irritants, or toxic chemicals (WAC 296-800-15030). Those chemicals are not

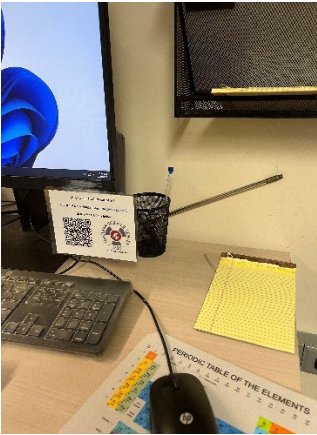
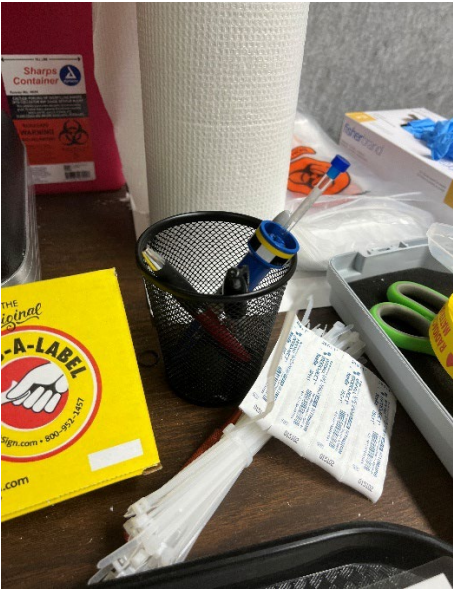
SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
		being used in Dodgen 214, so the eyewash with drench hose capability will suffice.
11/17/2025 Dodgen 106X #12216	Staff and/or students must currently climb up onto a cast iron pipe to replace monthly dosimetry in the 106X "pit" that could lead to slips or falls.	An "area monitor" placard with a room dosimeter holding was mounted to the wall in the 106X pit, allowing personnel to place and remove dosimetry from the stairs leading into the pit.
11/22/2025 Dodgen 201B #12263	The 12"x12" linoleum tiles (non-asbestos) are worn down to 8"x8" tiles (asbestos containing) on the floor at the reactor console. Concern for further wear of asbestos tiles releasing dust into the air.	Email send by C. Filip to EH&S asking if the concern is valid on 11/24/2025. 2/26/26: FacOps came and sealed floor with wax. Ops team looking to replace castors with roller blade castors. 4/9/2026: Castors were replaced with roller blade castors.
12/19/25 Dodgen 2 nd Floor Hallway	There was a puddle of water in the hallway when I arrived this morning. I surveyed and cleaned it. Thought the facility should know as it's source was from my estimates the roof. 	Work request submitted to FacOps. FacOps came out during the week of 12/29/25 and 1/5/26 to repair the roof and stop the leaks.
12/19/25 Fulmer B3 #12480	A part of the liquid nitrogen dewar cart wheel came off. It is on the outside of the right wheel. It looks like some sort of piece of metal fell off, and now the wheel may not be completely secure. 	Retaining clip was replaced.
12/19/25	One of the liquid nitrogen dewar is not accurately reading the liquid nitrogen level. It states the nitrogen level is half, even	As of 2/26/26, this issue has not resurfaced, and is considered closed.

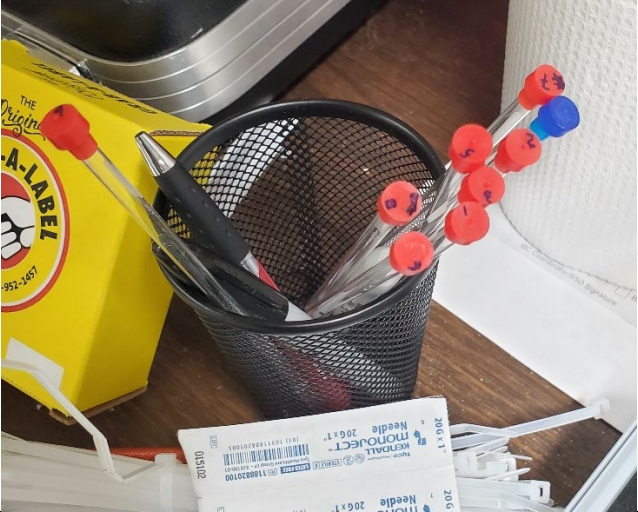
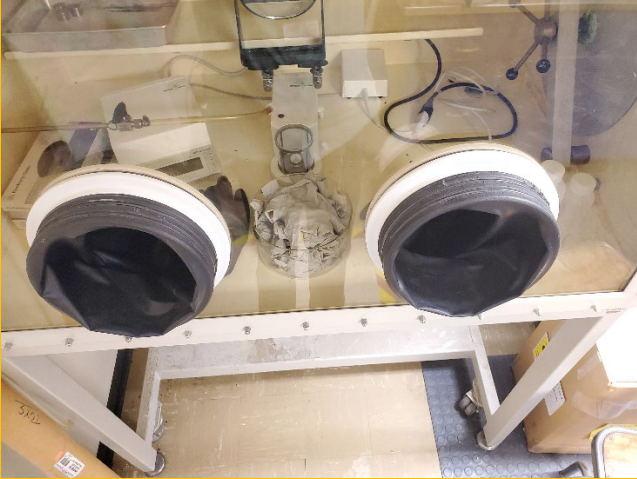
SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
Fulmer B3 #12481	though it is empty and completely relieved of pressure I attached a picture of the gauge, and the WSU number on the dewar. 	
1/6/26 #12595	J. Sullivan of RSP canceled personal dosimetry for all but two of the student Trainees enrolled for Spring 2026 CHEM 162 class.	The student Trainees will be re-enrolled for personal dosimetry. December 2025 dosimetry will be retained for January 2026 or until new dosimeters are received.
1/29/26 #12766 Dodgen 119	The services are corroding. 	The source of the corrosion was unable to be located. To get an idea if the corrosion was quick or slow, some metal samples were placed next to the services. As of 2/26/26, no corrosion was observed on the metal samples.
2/11/26 #12881 Dodgen 201	While I was moving a sample out of the core the other day some moisture on the experimenter's platform got onto my shoes. When I climbed up the ladder, I slipped. I caught myself, but some anti-slip tread tape on the ladder would help prevent slips in the future.	This safety concern was discussed at the Level 4 Safety Committee Meeting on 2/26/26 and the committee decided that any action to address the safety concern would result in potential contamination hazard, which would outweigh the slip hazard. No further action will be taken.
2/24/26 # 13074 Fulmer B3	NMR Sample found placed in the pen cup at the workstation for the Bruker 500 NMR.	Samples were discarded. User contacted.

SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
	I removed the sample and pen cup for now 	
2/24/26 # 13076 Fulmer B3	I turned around from the workstation and looked at the sample prep bench and saw another sample in the pen cup for the radioactive NMR sample prep pens and sharpie It was checked with the GM to at least verify the outside wasn't contaminated or radioactive. 	Samples were discarded. User contacted.
3/2/26 #13136 Fulmer B3E	Nine NMR tubes with unknown sample were placed and left in a cup style pen holder in the Bruker 500 MHz sample preparation station.	Samples were discarded. User contacted.

SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
		
3/17/26 #13264 Dodgen 121	The gloves attached to the glove box in Dodgen 121 show visible signs of degradation. It is uncertain whether they would successfully isolate the interior and exterior atmosphere or prevent contamination from crossing the gloved boundary. There is no signage indicating a decontaminated/decommissioned or tagged out status of the glove box.  	The Guo group was contacted to determine if the glovebox is to be used again. 4/23/26: Dr. Guo said he would like to have the lab placed in inactive status. 7/13/26: RSP was contacted about rendering the glovebox safe. RSP is working with chemistry about funding the cleanup project to deal with the Am-241 contamination.

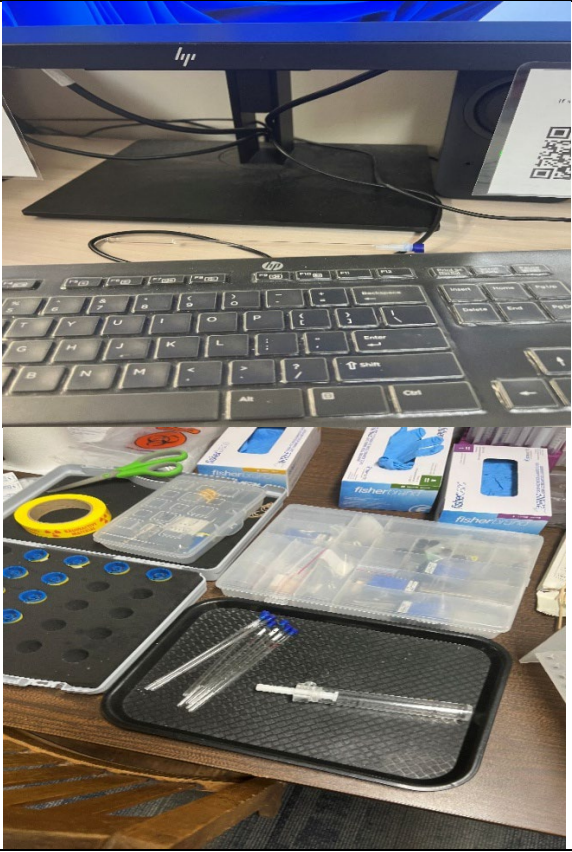
SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
		
3/17/26 #13265 Dodgen G0021	There is a fabric upholstered padded chair in the radiation work area located in Dodgen G0021 hidden behind some flattened boxes. It is extremely porous and would be very difficult to decontaminate. 	Dr. Guo was contacted and his students removed the chair within 24 hours.
3/23/26 #13298 Dodgen 212	Cabinet on east wall is stabilized by slanted wooden 4x4 beams that are screwed into the cabinets. David Doucet stated that he put the wood down to stabilize the cabinet to stand on it while working on the piping in the corner.	The cabinets have been reinforced.

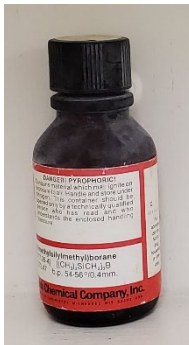
SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
		
3/23/26 #13301 Dodgen Exterior (by Dumpster)	There is a cap for a sewer manhole which appears to have gone missing (perhaps in a recent storm) and now presents a hole of about four to five inches across. This is a trip/fall hazard. A work request was submitted to facilities (WR # 2026-020296). 	Fac Ops created a plug for the hole which is now properly covered.
3/31/26 #13374 Fulmer B3E	Various NMR samples left on the sample prep bench and one left by the keyboard.	Samples were discarded. User contacted.

SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
		
4/6/26 #13429 Fulmer B3	Plastic spinner for radioactive samples is missing. Looked in the case with all of the non-rad spinners, but it is not there. Radioactive depth gauge has not been moved. No other safety concerns at this time.	The spinner was found among the other spinners. The labeling on the spinner was faded (see below picture), making it not clear that it was the spinner designated for radioactive samples. The spinner was relabeled and placed with the radioactive sample analysis materials. 
4/14/26 #13429 Fulmer B3	The top half of an NMR Tube was sitting in the sample tray and the bottom half couldn't be found anywhere. I disposed of the broken glass but I'm unsure where the sample ended up. There was also evidence of someone going through the glass waste box, as the lid was removed and not put back in properly I'm not sure if these are related or different incidents.	Samples were discarded. User contacted.

SAFETY CONCERN & RESOLUTION LOG

ID INFO	SAFETY CONCERN	STATUS / RESOLUTION
4/16/26 #13518 Dodgen 114	There is one (or more) glass containers of pyrophoric substances stored on an elevated shelf without segregation from other chemicals. 	The chemicals in question were placed in the chemical containers in Dodgen 214 for transport to EH&S for disposal.
4/25/26 #13582 Fulmer B3	The software page seemed to be stuck, and it did not respond when I clicked either "Submit My Test" or "Delete Finished Test."	Restarted IconNMR software to fix the problem.
6/3/26 #13854 Dodgen 221	Laboratory is potentially unsafe due to large amounts of aggregated hazardous chemicals, storage, handling, and inventory practices for >18 months. See attached pictures. Director would like laboratory cleared of at least 80% of chemical inventory and any aggregate quantities that pose risk to the building due to unsafe storage and/or condition of storage ASAP. Please notify EHS. 	Fumehood has been cleaned out, and many chemicals have been sent to EH&S for disposal. Two bins of chemicals are waiting for EH&S pickup. The lab is currently waiting for EH&S to come out and look at. EH&S should be coming out before the end of July.



RISK ASSESSMENT FOR NSC TASKS

Activity or Job			
Activity Location		Completed By	
Equipment Required			
Chemicals Required			

Recognize the Hazard: Hazards Checklist	
Will the activity be a deviation of current procedures?	☐ No ☐ Yes, explain:
Will the task handle radioactive material?	☐ No ☐ Yes, explain:
Can someone come into contact with radioactive material?	☐ No ☐ Yes, explain:
Can someone be exposed to ionizing radiation?	☐ No ☐ Yes, explain:
Can something fall into the reactor core?	☐ No ☐ Yes, explain:
Can someone slip, trip, or fall?	☐ No ☐ Yes, explain:
Is there a procedure for the task?	☐ No ☐ Yes, explain:
Can someone be exposed to chemicals/hazardous material?	☐ No ☐ Yes, explain:
Can someone be caught in anything?	☐ No ☐ Yes, explain:
Can someone injure someone else?	☐ No ☐ Yes, explain:
Can someone come in contact with a hot or cold surface or material?	☐ No ☐ Yes, explain:
Can someone come in contact with high or low pressure?	☐ No ☐ Yes, explain:
Can someone come in contact with a strong magnetic field?	☐ No ☐ Yes, explain:
Can someone come in contact with electricity?	☐ No ☐ Yes, explain:
Will the task require handling of sharp objects?	☐ No ☐ Yes, explain:
Will the task require handling of heavy objects?	☐ No ☐ Yes, explain:
Will the task require a repetitive motion?	☐ No ☐ Yes, explain:
Will the task require moving of a material?	☐ No ☐ Yes, explain:

Assess and Minimize the Hazards: Risk Assessment				
Work Steps and Tasks	Hazards Identified for each Task/Step	Initial Risk Level	Control/Safe Work Procedures for each Task/Step	Residual Risk Level
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High

Assess and Minimize the Hazards: Risk Assessment				
Work Steps and Tasks	Hazards Identified for each Task/Step	Initial Risk Level	Control/Safe Work Procedures for each Task/Step	Residual Risk Level
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High
		☐ Low ☐ Medium ☐ High ☐ Extremely High		☐ Low ☐ Medium ☐ High ☐ Extremely High

Prepare for Emergencies: What If Scenarios

What if

What if

What if

What if

Notes:Will the activity require supervision from management during completion? ☐ Yes ☐ NoWill the activity require a change to current procedures? ☐ Yes ☐ No

If so, list procedure number to be changed:

Will the activity require a change to the facility? ☐ Yes ☐ NoCompletion of the proposed activity has been approved by management? ☐ Yes ☐ No

Lab Worker Signature

Date

Supervisor Signature

Date

Annex A: Risk Assessment Form – Instructions for Use

Introduction

The NSC Task Risk Assessment Form is based on a subset of the ANSI Z.10 standard on Occupational Health and Safety Management Systems. This risk assessment is a semi-quantitative system which allows for the assignment of risk based on fitting hazards into definitions related to probability and severity (Annex B). The definitions are headings in a risk matrix (Annex C). The intersection of the chosen categories of probability and severity will give a risk category.

Implementation

Utilize the hazard checklist to identify potential hazards. Identify other hazards that may not be on the checklist. Perform a first assessment of the hazard/task using the probability and severity definitions to determine an initial risk. After obtaining a first risk assessment, form user(s) shall apply preferred hazard controls (elimination, substitution, and engineering) and other hazard controls (administrative, and personal protective equipment) at each step or for each hazard identified. After revision of the task with new hazard controls, the definitions are considered again, possibly resulting in a reduced risk level.

Preferred hazard controls are permitted to reduce both severity and probability of a hazard as they do not require human interaction or compliance to be effective. Other hazard controls are only permitted to reduce the probability of a hazard, not the severity. (One must assume task participants follow administrative and PPE requirements to have any chance of estimating probability). This risk assessment is designed to be recursive. It should be repeated until an acceptable risk is achieved, and then again at future periods to account for experience and lessons learned.

Requirements

Users of the form shall have all required State, WSU, and NSC training prior to working with hazards including familiarity with the Globally Harmonized System for Hazard Communication (GHS) and the ability to read and interpret Safety Data Sheets (SDS).

Limitations

The primary limitation of this method is that it cannot account for hazards which are not identified. The hazard identification checklist at the beginning of the form is a guide, not an exhaustive list. Critical thinking, experience, and situational awareness are important aspects of hazard assessment. New workers should be frequently coached in the use of this form, and even experienced workers can benefit from another set of eyes.

Another limitation of this method is the lack of risk assessment precision. Different people may come to different conclusions as to which definitions fit the situation best, although a group will become “calibrated” as they gain experience with the process; variance diminishes over time. Even then, this method will never be able to match the precision of complex calculation processes like LOPA. The benefit is that this method can be rapidly performed by individuals and without detailed statistical information.

Annex B: Risk Assessment Form – Definitions

The following definitions shall be used when assigning levels of severity and probability for use in the risk matrix. Note that examples given for probability are for instruction but are not part of the definition.

Severity

- **Catastrophic** – Death, permanent disability; system or facility loss; lasting public health or environmental impact
- **Critical** – Serious injury; temporary disability; subsystem loss or facility damage; temporary public health or environmental impact
- **Moderate** – Medical treatment; lost workdays; minor facility damage; external reporting cleanup requirements
- **Negligible** – First aid only; negligible or slight facility damage; routine cleanup

Probability

- **Frequent** – Likely to occur repeatedly
(e.g. slipping while walking on wet ice)
- **Likely** – Probable to occur multiple but infrequent times
(e.g. breaking a glass container)
- **Occasional** – likely to occur at some time
(e.g. getting cut while opening boxes with a box knife)
- **Seldom** – Possible, but not likely to occur
(e.g. blowout of a well-maintained tire)
- **Unlikely** – Very improbable; can reasonably assume it will not occur
(e.g. being struck by a meteorite)

Annex C: Risk Assessment Form – Risk Matrix

Risk Assessment Matrix

Probability (expected frequency) Severity (expected consequence)	Frequent: Continuous, regular, or inevitable occurrences	Likely: Several or numerous occurrences	Occasional: Sporadic or intermittent occurrence	Seldom: Infrequent occurrences	Unlikely: Possible occurrences but improbable
Catastrophic: Death, unacceptable loss or damage to NSC or researcher(s)	Extremely High	Extremely High	High	High	Medium
Critical: Severe injury, illness, loss or damage to NSC or researcher(s)	Extremely High	High	High	Medium	Low
Moderate: Minor injury, illness, loss or damage to NSC or researcher(s)	High	Medium	Medium	Low	Low
Negligible: Minimal injury, loss or damage to NSC or researcher(s)	Medium	Low	Low	Low	Low

3.10.4 Investigation & Resolution

The supervisor shall immediately conduct an investigation and document the results.

All reports received shall be documented in writing, investigated, and corrected by the Level 4 NSC Safety, Health, and Security Committee and then submitted in writing, both completed and in progress, at each Reactor Safeguards Committee meeting for review and approval of the resolution of the concern.

3.10.5 Action

Failure to comply with safety policies and procedures is to be considered serious and result in timely corrective or disciplinary action judged to be appropriate for the specific circumstances at hand. Progressive corrective/disciplinary action is appropriate for addressing non-compliance issues, recognizing that more serious offenses do not necessarily require that intermediate steps be taken first. Questions concerning appropriate corrective or disciplinary action should be addressed to the appropriate Director/Manager or *Human Resource Services*.

3.11 Appendix A – List of Laboratory Managers for NSC Spaces

Table 3-1: List of laboratory managers for NSC spaces.

Facility	Room Number	Laboratory Manager
Dodgen Research Facility	2	Clark Filip
Dodgen Research Facility	21	Xiaofeng Guo
Dodgen Research Facility	101	Zach Heiden
Dodgen Research Facility	110	Zach Heiden
Dodgen Research Facility	112	Zach Heiden
Dodgen Research Facility	114	Zach Heiden
Dodgen Research Facility	116	Zach Heiden
Dodgen Research Facility	119	Zach Heiden
Dodgen Research Facility	121	Xiaofeng Guo
Dodgen Research Facility	201	Clark Filip
Dodgen Research Facility	210	Zach Heiden
Dodgen Research Facility	214	Zach Heiden
Dodgen Research Facility	215	Zach Heiden
Dodgen Research Facility	221	Zach Heiden
Fulmer Hall	B3	Zach Heiden
Fulmer Hall	151	Zach Heiden
Fulmer Hall	151A	Zach Heiden

4 SAFETY CULTURE

4.1 References

1. Guidance for Establishing and Maintaining a Safety Conscious Work Environment, Regulatory Information Summary (RIS) 2005-18, U.S. Nuclear Regulatory Commission.
2. Freedom of Employees in the Nuclear Industry to Raise Safety Concerns without Fear of Retaliation, Policy Statement, 5/14/1996, U.S. Nuclear Regulatory Commission.

4.2 NSC Policy Statement on Safety Culture & Safety Conscious Work Environment

Students, staff, faculty, and visitors to the Nuclear Science Center expect a safe environment, and WSU is obliged to provide a workplace free from recognized hazards. A safe work environment relies upon a positive safety culture that requires open communication of safety concerns amongst all workers engaged in any activity they are trained to perform. Personnel must also feel empowered to report safety concerns to NSC management, campus safety resources, or directly to regulatory agencies without fear of reprisal.

A safety conscious work environment is a tenant to positive safety culture and safe operations at the Nuclear Science Center. Multiple avenues in reporting concerns shall be available to workers that include both formal, informal, verbal, and written concerns, and employees shall have the expectation that each concern will be evaluated, controls applied and corrections made when and where identified.

4.3 Work Processes

- Due to the breadth of work at the Center, multiple resources are available to support safe work practices and provide a safe workplace.
 - For Center-wide work processes and required training, see the NSC Total Health and Safety Plan, the NSC Facility Procedures, and the Laboratory Safety Manual. These documents are reviewed annually by NSC management.
 - For procedures involving the reactor Facility License R-76, and those procedures required in Technical Specification 6.8(2): See the NSC Reactor Standard Operating Procedures, NSC Emergency Plan Implementing Procedures, and the NSC Administrative Procedures. These documents are reviewed annual by all licensees, and biennially by the WSU Reactor Safeguards Committee.
 - For procedures for client specific processes, see the NSC Guidelines for QA/QC activities.
 - For NUCS work processes, see the NSC Research Procedures and Forms.

4.4 Environment for Raising Concerns

The NSC maintains a safety conscious work environment (SCWE) where personnel may freely raise safety concerns without fear of retaliation, intimidation, harassment, or discrimination.

A SCWE encourages employees to raise concerns to supervisors, management, and regulators; requires that those concerns are promptly reviewed, assigned priority, investigated, and resolved; and that timely feedback is provided to personnel identifying concerns.

The NSC Total Health and Safety Plan provides policies and procedures for training, raising workplace concerns, and roles and responsibilities of employees, supervisors, and NSC administration. NSC Administration will identify, through reporting avenues below, the safety concern, document the concern, and work with the supervisor and/or employee to resolve the safety concern in a timely manner. Safety concerns will be addressed at each weekly NSC Senior Staff meeting, and the report with resolution will be presented to the Level 4 Safety, Health, & Security Committee and the Reactor Safeguards Committee during the regular quarterly meetings.

4.4.1 *Anyone at the Nuclear Science Center may raise safety concerns through the following avenues (internal to WSU):*

- “Report a Safety Concern” at <https://nsc.wsu.edu/safety-concern/>
- Notify their NSC Safety Committee (Level 4) representative or inform anyone on the committee (<https://nsc.wsu.edu/shs/>) of their concern.
- SPPM 2.52: Reporting Hazards - University personnel observing serious safety concerns affecting or potentially affecting University employees are to immediately contact:
 - (1) immediate supervisor; and
 - (2) the unit administrator (NSC Director, cchines@wsu.edu), and/or
 - (3) Environmental Health and Safety (EH&S); telephone 509-335-3041.
- Reporting Hazards Caused by Contractors. If University personnel observe serious hazards to University employees created by building or construction contractors, the personnel are to report the hazards to Environmental Health and Safety; telephone 509-335-3041. Environmental Health & Safety coordinates with either Facilities Services, Capital or Facilities Services, Operations to communicate the safety concern to the contractor.

4.4.2 *Anyone at the Nuclear Science Center may raise safety concerns through additional avenues (external to WSU):*

- U.S. Nuclear Regulatory Commission website: <https://www.nrc.gov/about-nrc/contactus.html>
- Washington State Labor and Industries (L&I): <https://lni.wa.gov/>
- Washington State Department of Health, Office of Radiation Protection: <https://doh.wa.gov/community-and-environment/radiation/contact-information>
- U.S. Occupational Safety and Health Administration (OSHA): <https://www.osha.gov/workers/file-complaint>

4.5 Stop Work Authority

The Director of the Nuclear Science Center authorizes Stop Work Authority (SWA) for Dodgen Research Facility and NUCS Core Facility personnel, when unexpected conditions or hazards arise. SWA is necessary to promote the concept that immediate action can prevent injury, illness, or death in the workplace, and allows employees to stop work if they believe there is an immediate danger present.

NSC Management shall reinforce expectations that individuals take the time to do the job right the first time, seek guidance when unsure, and stop if an unexpected condition or equipment response is encountered.

Employees must stop work activities when confronted with an unexpected condition, communicate with supervisors, and resolve the condition prior to continuing work activities. When appropriate, individuals shall consult system and equipment experts.

4.6 Training

Documented training on this THSP chapter shall be provided to all NSC employees, students, and PIs. NSC reactor licensees receive documented annual required reading for the THSP.