EP, RP, and Security Prioritization Tabletop Exercises

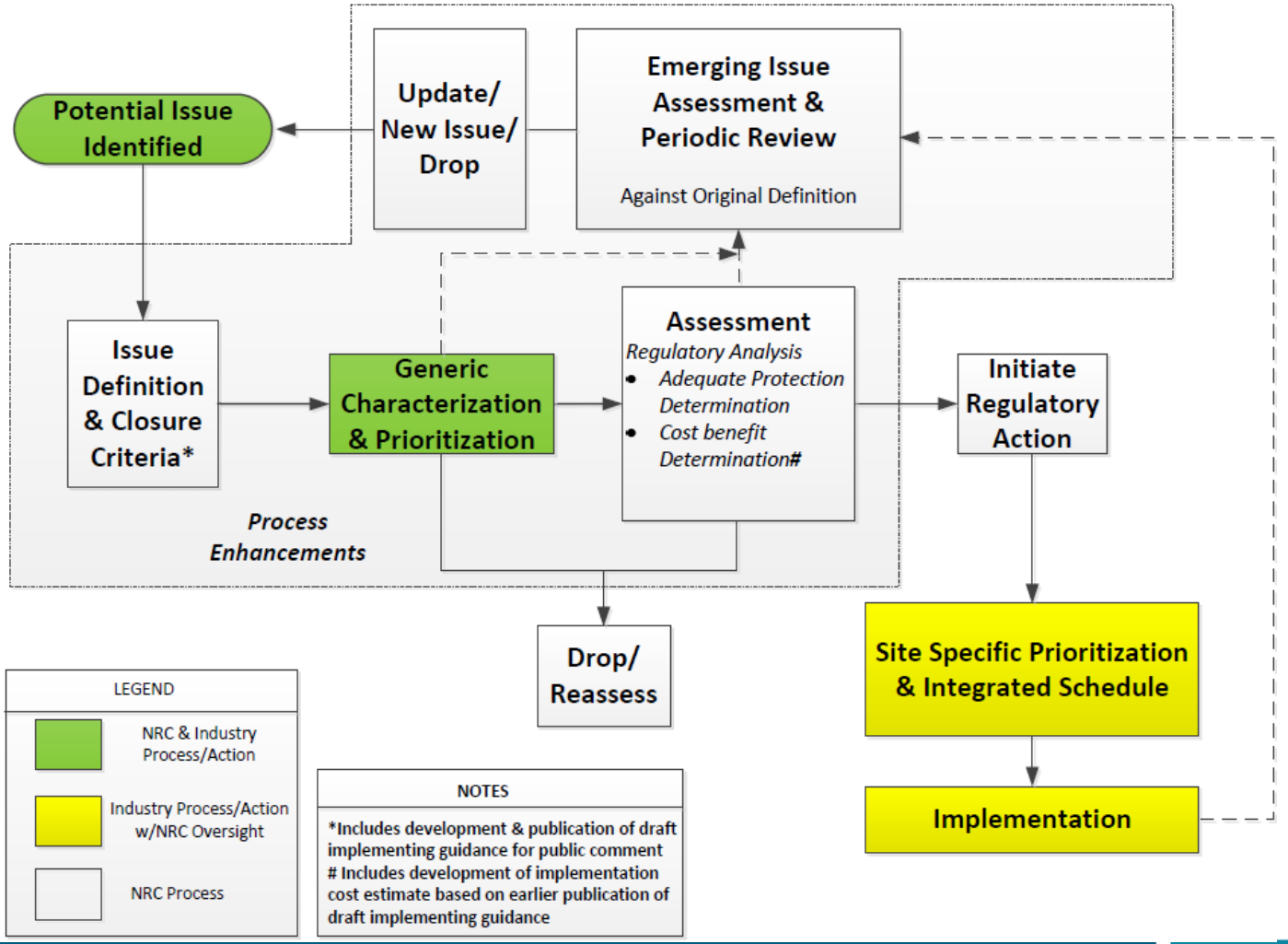
NRC Public Meeting

September 8, 2014 • Three White Flint North

Agenda

- Overview of NEI Guidance
- Emergency Preparedness exercises
- Radiation Protection Exercises
- Security Exercises
- Aggregation for Prioritization Philosophy
- Closing

Prioritization and Scheduling – Big Picture



What gets prioritized?

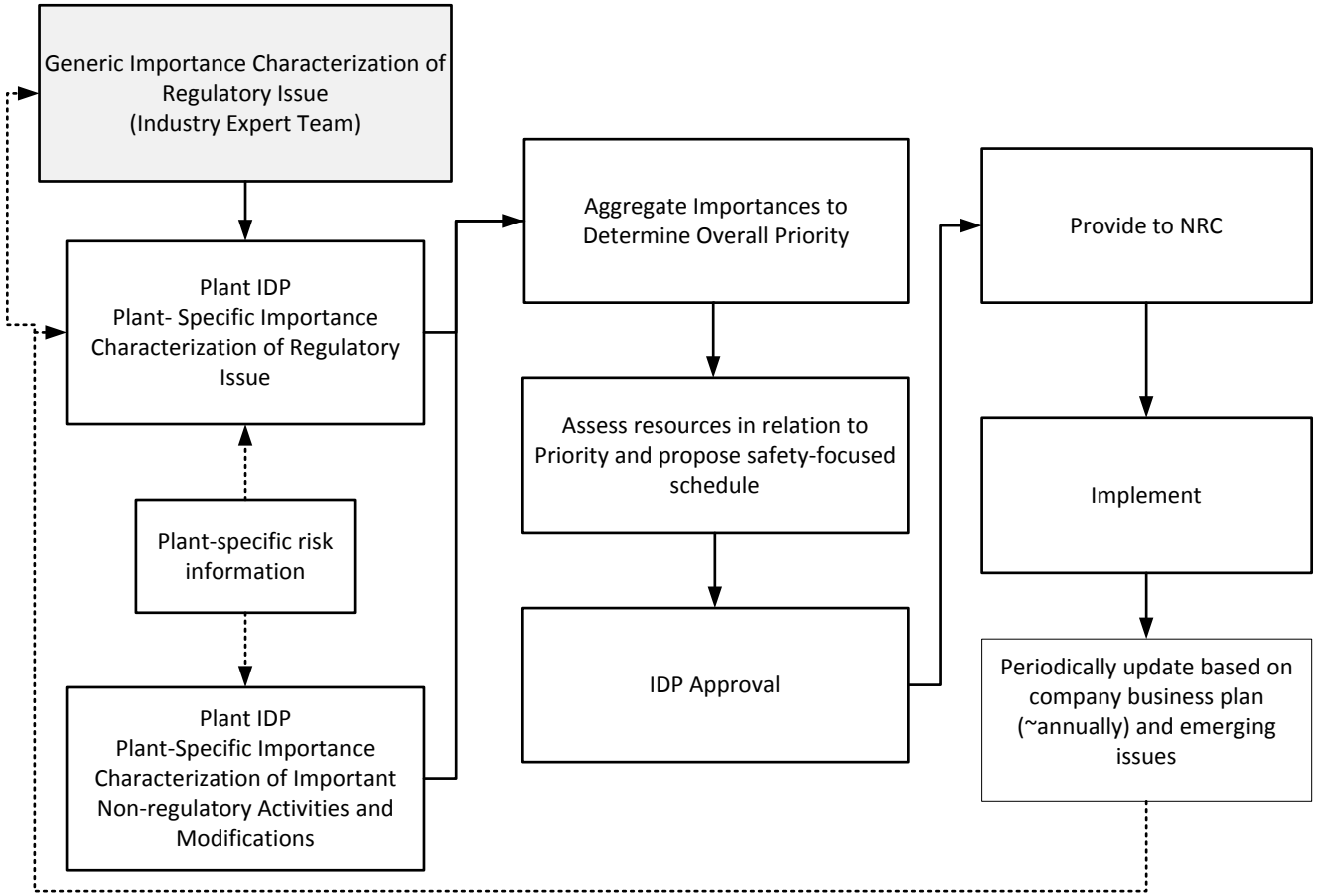
- Regulatory issues and findings
- Non-regulatory issues or nonsafety-related equipment with safety implications as identified by non-regulatory risk insights
- Non-regulatory issues and activities, as identified by resource peaks in the business plan

What does NOT get prioritized?

- General O&M, facilities maintenance, etc.
- Immediate action necessary for continued safe operation
- Immediate repairs necessary for continued power production
  - Implementation should not adversely impact the scheduling of Priority 1 activities.

Overview of NEI Guidance

Plant Process for Schedule Prioritization



Importance Characterization

- 5 categories
  - Safety, Security, EP, RP, Reliability

Characterization performed/reviewed by:

- Generic Assessment Expert Team (GAET)
  - Multi-disciplinary teams formed for specific issues
- Plant-Specific
  - Subject Matter Expert (SME)
  - Integrated Decision-making Panel (IDP)

GAET Information Transfer to Plant SME and IDP (in brief)

1. Description of the specific regulatory issue or proposed activity
2. Publically available references (regulatory and industry)
3. Step 1, 2, and 3a/3b results and discussion
4. Technical bases for conclusions regarding nuclear safety importance (and other attributes)
5. Considerations and characteristics that may affect the plant-specific importance determination, particularly for safety

Plant-Specific Prioritization and Scheduling

- Use available GAET evaluations
- SMEs add P-S insights and considerations
- IDP review and consensus approval of importances
- Aggregation to determine priority

Overview of Prioritization Approach

- Safety impact is the primary focus
- SDP thresholds are used (reverse perspective)
- Regulatory issues and plant-initiated activities are prioritized into broad categories spanning a decade
- Questions to focus assessment are based on risk informed adaptation of NEI's 96-07 (10CFR50.59) guidance and SDP
- Definition of "more than minimal" is consistent with RG 1.174 guidelines for small increase in risk and 10% change in initiator frequency per 50.59 guidance
- Cost/benefit is a consideration consistent with Severe Accident Mitigation Alternatives (SAMA) approach

Safety Importance Characterization

- Step 1: No Impact or Adverse Impact?
- Step 2: Minimal Impact?
- Step 3A: Relative Impact versus Current Relative Risk
  - Very Low
  - Low
  - Medium
  - High
- Step 3B: Quantitative

Safety Importance Characterization

- Current Relative Risk Level minus Projected Relative Risk Level
- Relative Improvement Approach used for Matrix
- Matrix includes Lower Bound, Midpoint and Upper Bound to display Impact of Factor of 10 range (to address uncertainty considerations)

Table 3-1 Matrix by Current Risk and Potential Impact					
UB is upper bound of the risk range; Mid is "mid-range" (0.3 times UB); LB is factor of 10 lower than UB[1]					
Current Risk associated with Issue	**Potential Impact of Action Resolving Issue (Reduction in Risk)**				
	None	Very Small/Minimal	Small	Medium	High
	0%	0 to 25%	25 to 50%	50% to 90%	>90%
	Importance				
Green (VL) LB	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) Mid	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) UB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) LB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) Mid	Very Low	Very Low	Low	Low	Low
White (L) UB	Very Low	Low	Low	Low	Low
Yellow (M) LB	Very Low	Low	Low	Low	Low
Yellow (M) Mid	Very Low	Low	Medium	Medium	Medium
Yellow (M) UB	Very Low	Medium	Medium	Medium	Medium
Red (H) LB		Medium	Medium	Medium	Medium
Red (H) Mid		High	High	High	High
Red (H) UB		High	High	High	High

[1] The thresholds in the left column are consistent with the SDP and are (in units of per yr), for CDF: Green/White = 10^{-6}, White/Yellow = 10^{-5}, Yellow/Red = 10^{-4}; and for LERF: Green/White = 10^{-7}, White/Yellow = 10^{-6}, Yellow/Red = 10^{-5}.

Security, EP & RP Importance Characterization

- Capture aspects of public safety vs. nuclear safety
- 2-step process following Safety importance characterization:
  - Step 1: What is the relative significance?
    - flowchart
  - Step 2: How effective is the proposed measure to address it?
    - matrix

Table 4-1 Matrix by Current Significance and Potential Impact

Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

Reliability Importance Characterization

- Capture potential future impacts on nuclear or public safety
- Again, 2-step process:
  - Step 1: Any impact?
    - questions
  - Step 2: How urgent is the issue and duration of outage avoided by addressing it?
    - matrix

Reliability Importance Characterization

- Concerned with reliability of SSCs used to generate electricity and stewardship of plant site
  - aging management, replacement of equipment whose failure could have an adverse impact on overall plant performance in terms of availability, forced outage, power reduction, or potential for a reactor scram
- Performance indicators (PIs) under NRC's Reactor Oversight Process include measures of unplanned scrams and unplanned power changes
- Exceeding a threshold for a PI could result in the plant being placed in a column of the Action Matrix with heightened regulatory scrutiny.

Table 4-2 Matrix by Urgency and Potential Impact

Time frame (in operating cycles) for action associated with the issue	**Potential Impact of Action Resolving Issue (Duration of Plant Outage Avoided)**		
	Day(s)	Week(s)	Month(s)
	Importance		
Long (≥ 2)	Very Low	Low	Medium
Short (< 2)	Low	Medium	High

EP Exercise #1

- A site's EOF has sustained significant fire-related damage that renders the facility unusable. An interim facility has been established.
- The primary facility must be rebuilt.

EP #1 – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**
2. ☒ YES ☐ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. ☒ YES ☐ NO **Result in an impact on the consequences of a risk significant accident sequence?**
4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**
5. ☒ YES ☐ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

If ANY response is YES, continue on to Step 2.

EP #1 – Safety Importance – Step 2

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in more than a minimal decrease in frequency of occurrence of a risk significant accident initiator?**

2. ☐ YES ☒ NO **Result in more than a minimal improvement in the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**

3. ☐ YES ☒ NO **Result in more than a minimal decrease in the consequences of a risk significant accident sequence?**

4. ☐ YES ☒ NO **Result in more than a minimal improvement in the capability of a fission product barrier?**

5. ☒ YES ☐ NO **Result in more than a minimal improvement in defense-in-depth capability or improvement in safety margin?**

If ALL the responses are NO, issue or activity screens to MINIMAL IMPACT and Nuclear Safety Importance is Very Low.

If ANY response is YES, continue on to Step 3.

EP #1 – Safety Importance – Step 3

- There is virtually no impact on CDF; we are looking at offsite consequences, or LERF.
- Assume CDF nominally is 1E-5 to 1E-4 /yr, with LERF an order of magnitude lower at 1E-6 to 1E-5, including unquantified external events. On the LERF scale in the Step 3a matrix, that might put us in the mid Yellow band for current risk.

EP #1 – Safety Importance – Step 3

Table 3-1 Matrix by Current Risk and Potential Impact					
UB is upper bound of the risk range; Mid is "mid-range" (0.3 times UB); LB is factor of 10 lower than UB[1]					
Current Risk associated with Issue	**Potential Impact of Action Resolving Issue (Reduction in Risk)**				
	None	Very Small/Minimal	Small	Medium	High
	0%	0 to 25%	25 to 50%	50% to 90%	>90%
	Importance				
Green (VL) LB	Very Low	Very Low	Very Low	Very Low	Very Low
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Green (VL) UB	Very Low	Very Low	Very Low	Very Low	Very Low
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White (L) Mid	Very Low	Very Low	Low	Low	Low
White (L) UB	Very Low	Low	Low	Low	Low
Yellow (M) LB	Very Low	Low	Low	Low	Low
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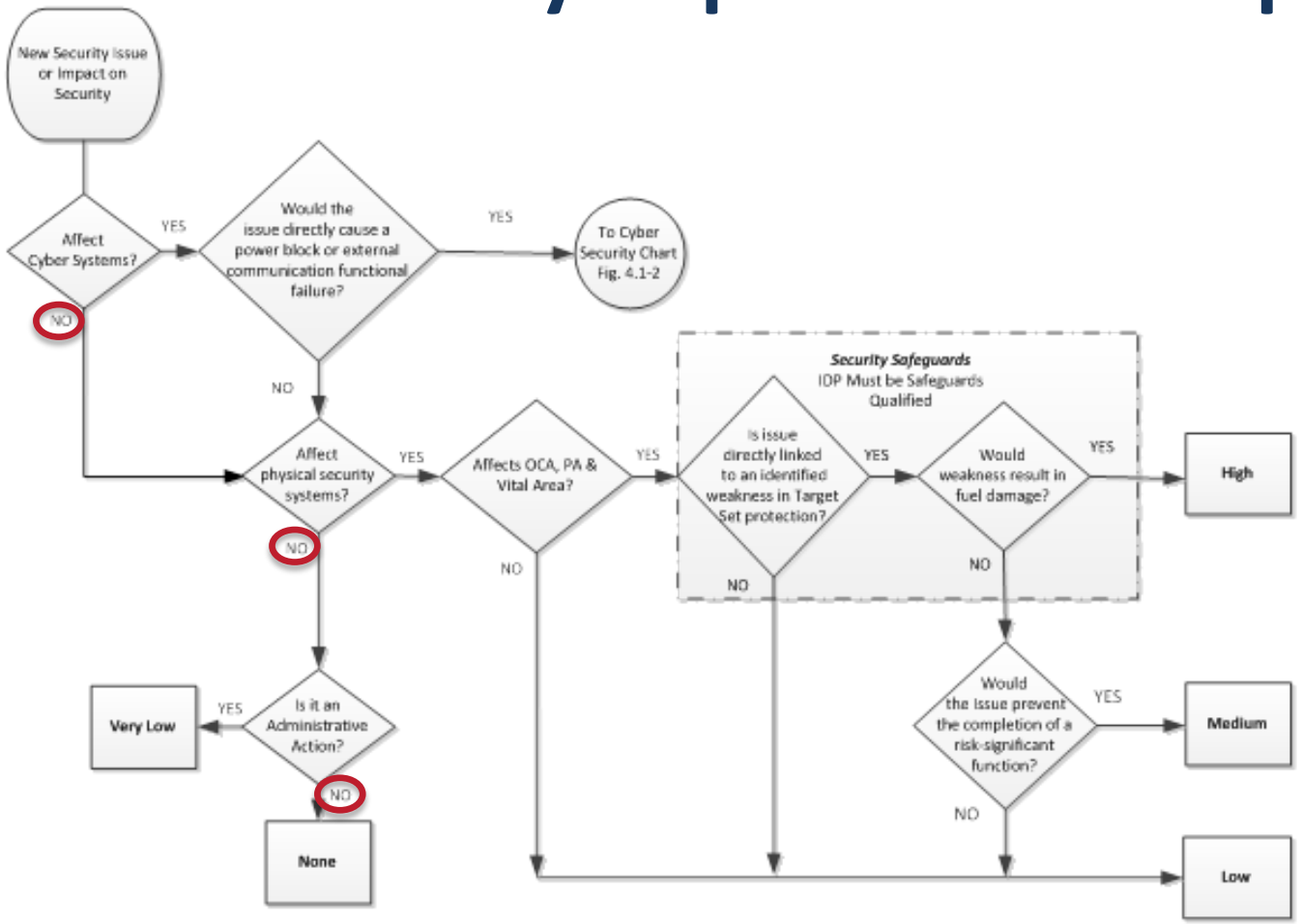
Red (H) LB		Medium	Medium	Medium	Medium
Red (H) Mid		High	High	High	High
Red (H) UB		High	High	High	High

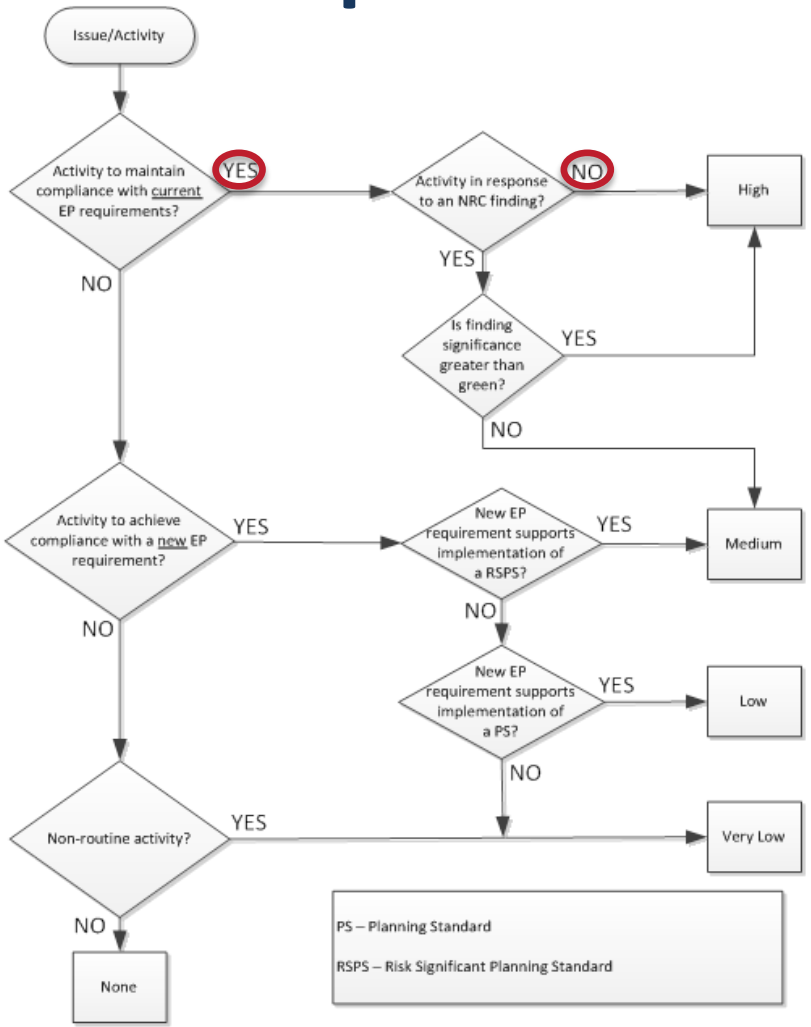
[1] The thresholds in the left column are consistent with the SDP and are (in units of per yr), for CDF: Green/White = 10^{-6}, White/Yellow = 10^{-5}, Yellow/Red = 10^{-4}; and for LERF: Green/White = 10^{-7}, White/Yellow = 10^{-6}, Yellow/Red = 10^{-5}.

EP #1 – Security Importance – Step 1



NOTE: As used in this document the term issue may be a cyber-security intrusion, a potential cyber-security intrusion, or a security action or potential action

EP #1 – EP Importance – Step 1



EP #1 – EP Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
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Medium	Very Low	Low	Medium
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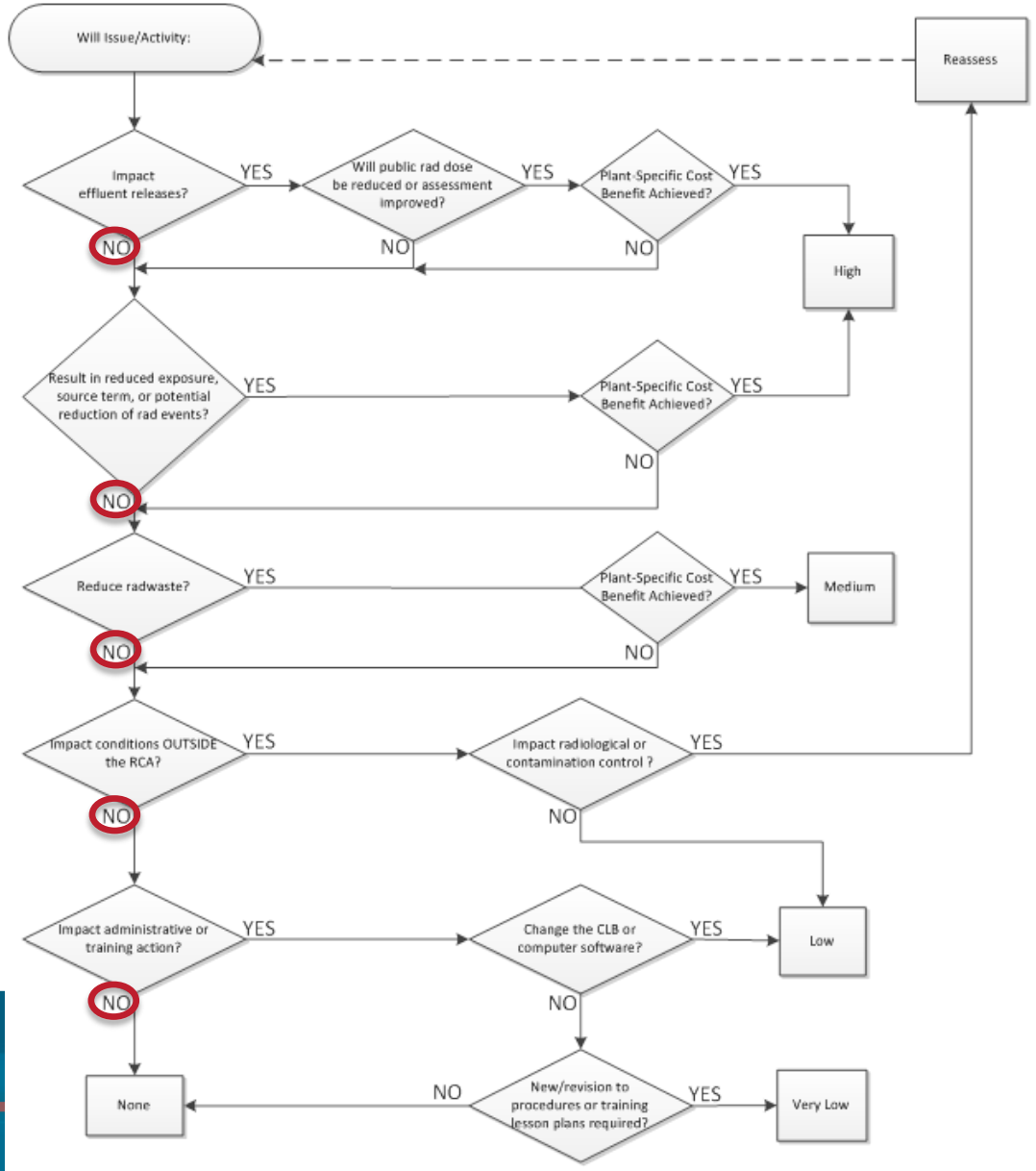
EP #1 – RP Importance – Step 1



EP #1 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO **Is there a significant risk of SSC failure?**
2. ☐ YES ☒ NO **Is there a significant replacement lead time?**
3. ☐ YES ☒ NO **Is there an obsolescence issue?**
4. ☐ YES ☒ NO **Is there an impact on plant reliability?**
5. ☐ YES ☒ NO **Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

EP #1 – Other Considerations

EP #1 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
Rebuild EOF	Medium	None	High	None	None	

EP Exercise #2

- The FCC has approved radio frequency usage changes for some businesses operating in the site vicinity. Subsequent testing has verified that siren control has been impacted by frequency interference (i.e., control function is not sufficiently reliable).
- A new primary control method is needed.

EP #2 – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**

2. ☐ YES ☒ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**

3. ☒ YES ☐ NO **Result in an impact on the consequences of a risk significant accident sequence?**

4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**

5. ☒ YES ☐ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

If ANY response is YES, continue on to Step 2.

EP #2 – Safety Importance – Step 2

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in more than a minimal decrease in frequency of occurrence of a risk significant accident initiator?**

2. ☐ YES ☒ NO **Result in more than a minimal improvement in the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**

3. ☐ YES ☒ NO **Result in more than a minimal decrease in the consequences of a risk significant accident sequence?**

4. ☐ YES ☒ NO **Result in more than a minimal improvement in the capability of a fission product barrier?**

5. ☒ YES ☐ NO **Result in more than a minimal improvement in defense-in-depth capability or improvement in safety margin?**

If ALL the responses are NO, issue or activity screens to MINIMAL IMPACT and Nuclear Safety Importance is Very Low.

If ANY response is YES, continue on to Step 3.

EP #2 – Safety Importance – Step 3

- There is virtually no impact on CDF; we are looking at offsite consequences, or LERF.
- Assume CDF nominally is 1E-5 to 1E-4 /yr, with LERF an order of magnitude lower at 1E-6 to 1E-5, including unquantified external events. On the LERF scale in the Step 3a matrix, that might put us in the mid Yellow band for current risk.

EP #2 – Safety Importance – Step 3

Table 3-1 Matrix by Current Risk and Potential Impact					
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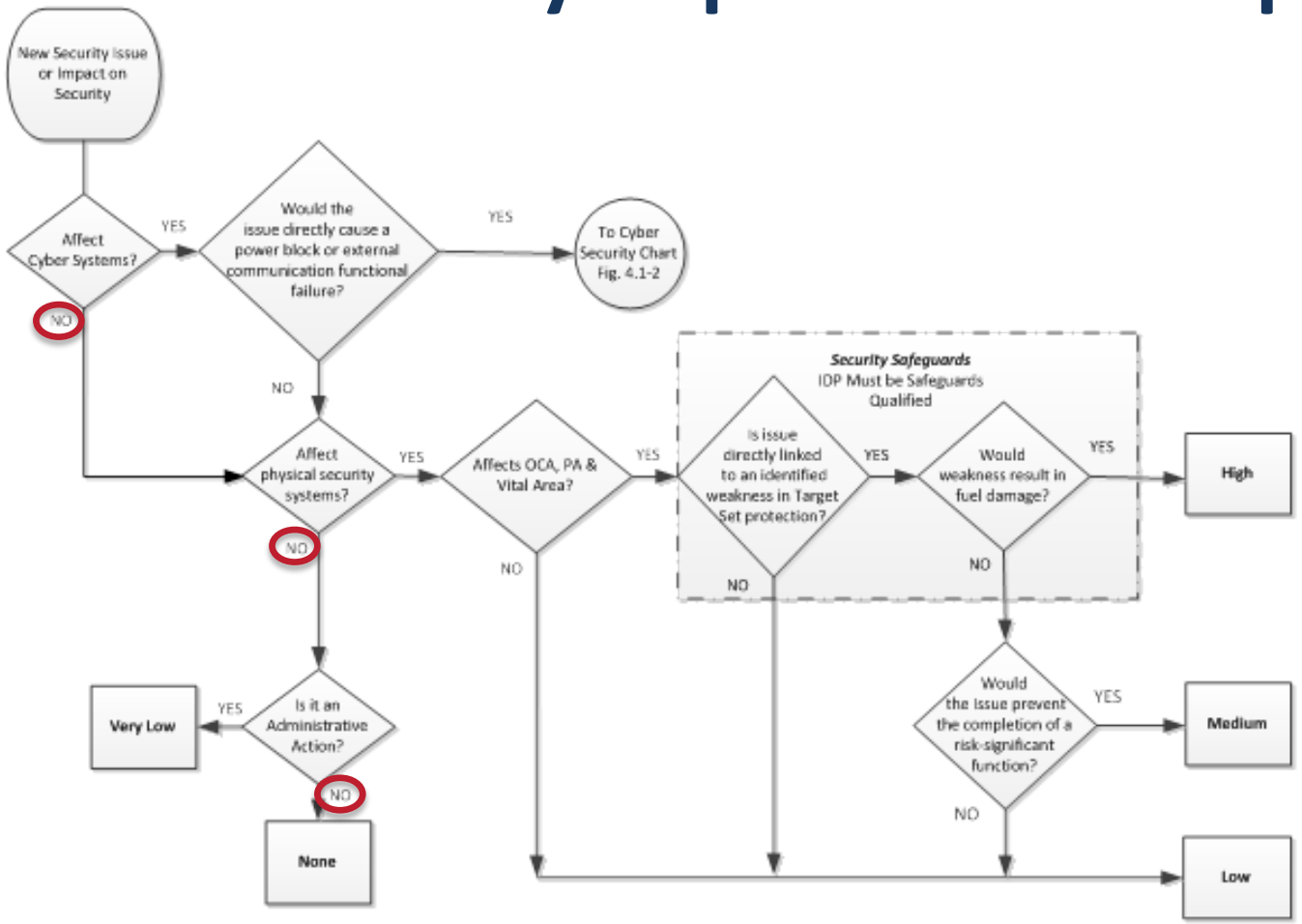
Yellow (M) UB	Very Low	Medium	Medium	Medium	Medium
Red (H) LB		Medium	Medium	Medium	Medium
Red (H) Mid		High	High	High	High
Red (H) UB		High	High	High	High

[1] The thresholds in the left column are consistent with the SDP and are (in units of per yr), for CDF: Green/White = 10^{-6}, White/Yellow = 10^{-5}, Yellow/Red = 10^{-4}; and for LERF: Green/White = 10^{-7}, White/Yellow = 10^{-6}, Yellow/Red = 10^{-5}.

EP #2 – Security Importance – Step 1



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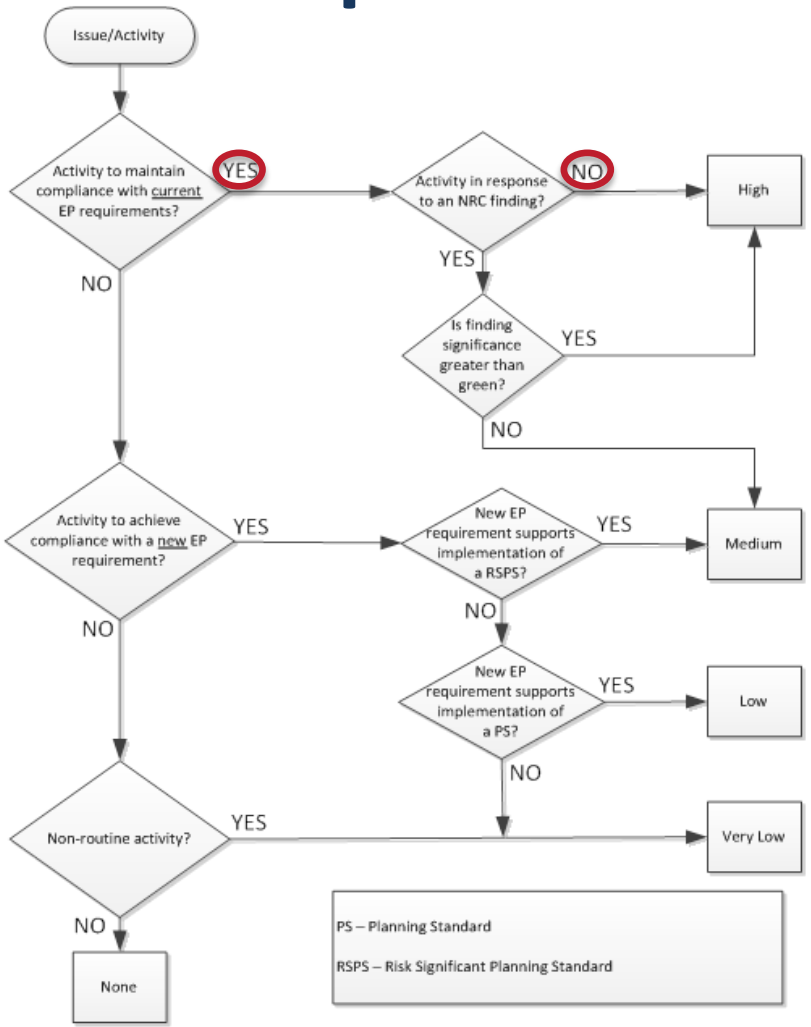
EP #2 – EP Importance – Step 1



EP #2 – EP Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
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	0 to 25%	25 to 80%	>80%
	Importance		
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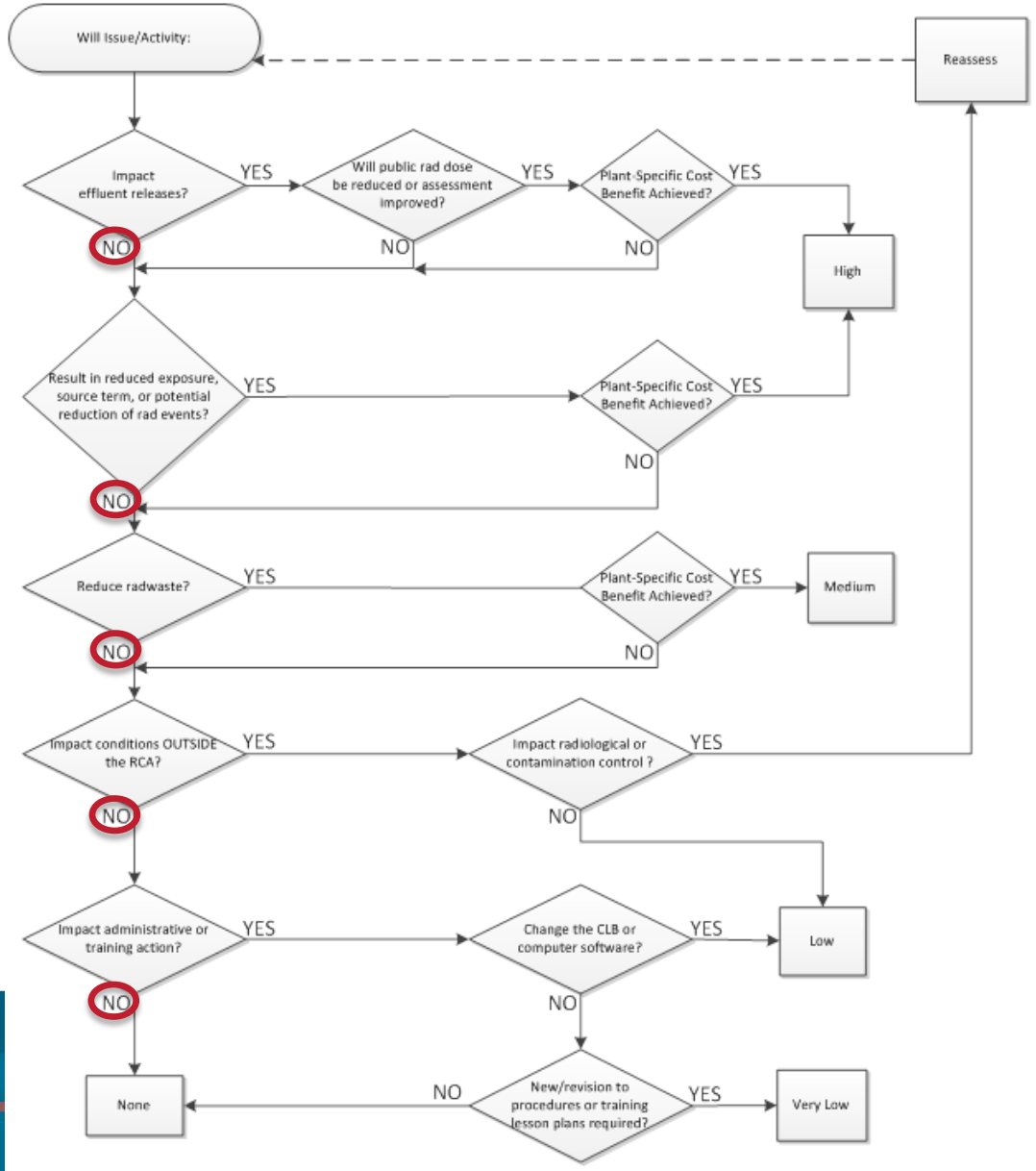
EP #2 – RP Importance – Step 1



EP #2 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO Is there a significant risk of SSC failure?

2. ☐ YES ☒ NO Is there a significant replacement lead time?

3. ☐ YES ☒ NO Is there an obsolescence issue?

4. ☐ YES ☒ NO Is there an impact on plant reliability?

5. ☐ YES ☒ NO Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

EP #2 – Other Considerations

- Poor performance indicator results

EP #2 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
New primary siren control	Low/ Medium	None	High	None	None	

EP Exercise #3

- The NRC is changing 10 CFR 50, Appendix E, to add a new requirement to develop a range of protective actions to protect onsite personnel during hostile action to ensure the continued ability of the licensee to safely shut down the reactor and perform the functions of the licensee's emergency plan.

EP #3 – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**
2. ☒ YES ☐ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. ☐ YES ☒ NO **Result in an impact on the consequences of a risk significant accident sequence?**
4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**
5. ☒ YES ☐ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

If ANY response is YES, continue on to Step 2.

EP #3 – Safety Importance – Step 2

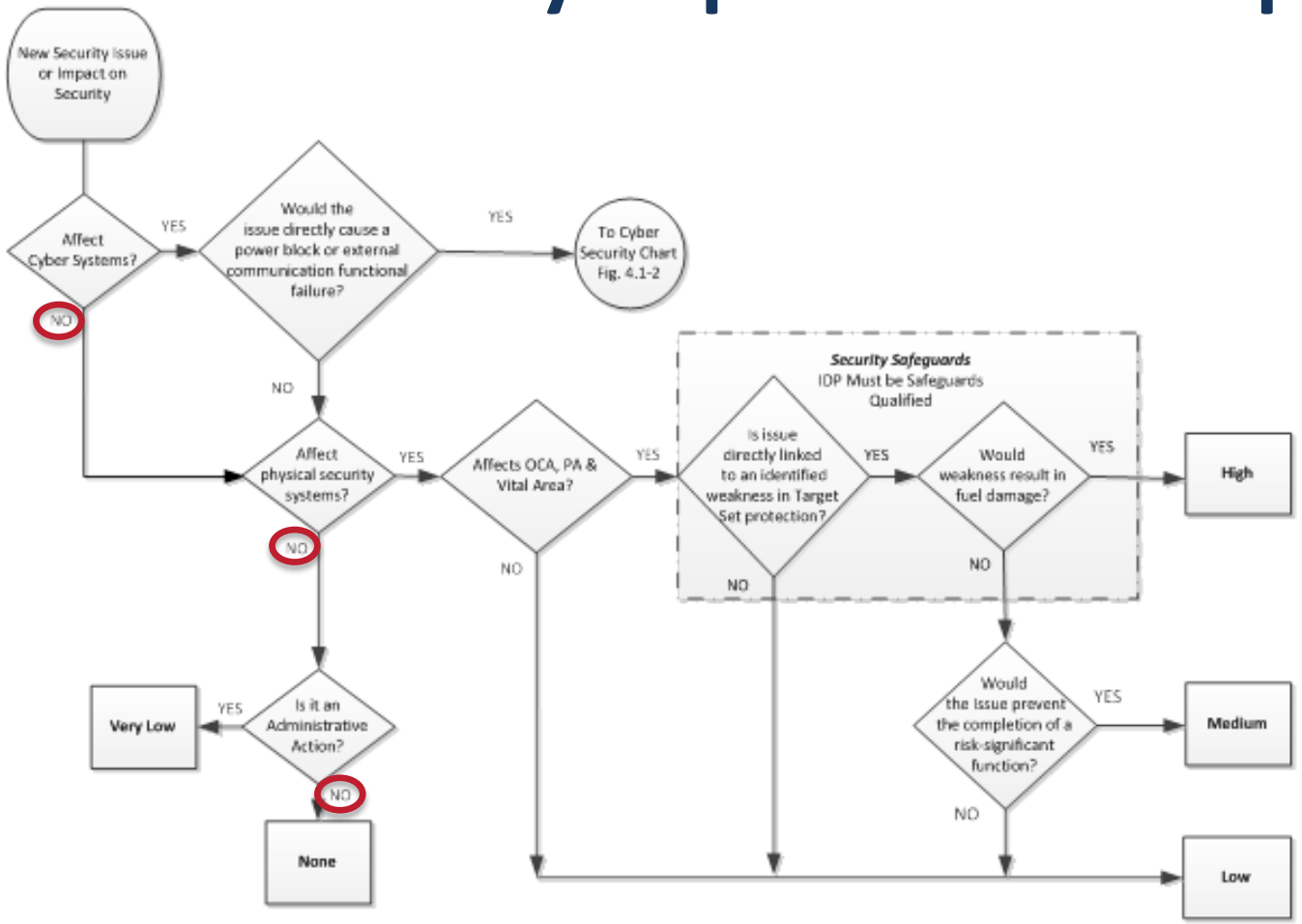
Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in more than a minimal decrease in frequency of occurrence of a risk significant accident initiator?**
2. ☐ YES ☒ NO **Result in more than a minimal improvement in the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. ☐ YES ☒ NO **Result in more than a minimal decrease in the consequences of a risk significant accident sequence?**
4. ☐ YES ☒ NO **Result in more than a minimal improvement in the capability of a fission product barrier?**
5. ☐ YES ☒ NO **Result in more than a minimal improvement in defense-in-depth capability or improvement in safety margin?**

If ALL the responses are NO, issue or activity screens to MINIMAL IMPACT and Nuclear Safety Importance is Very Low.

If ANY response is YES, continue on to Step 3.

EP #3 – Security Importance – Step 1



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EP #3 – EP Importance – Step 1

EP #3 – EP Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
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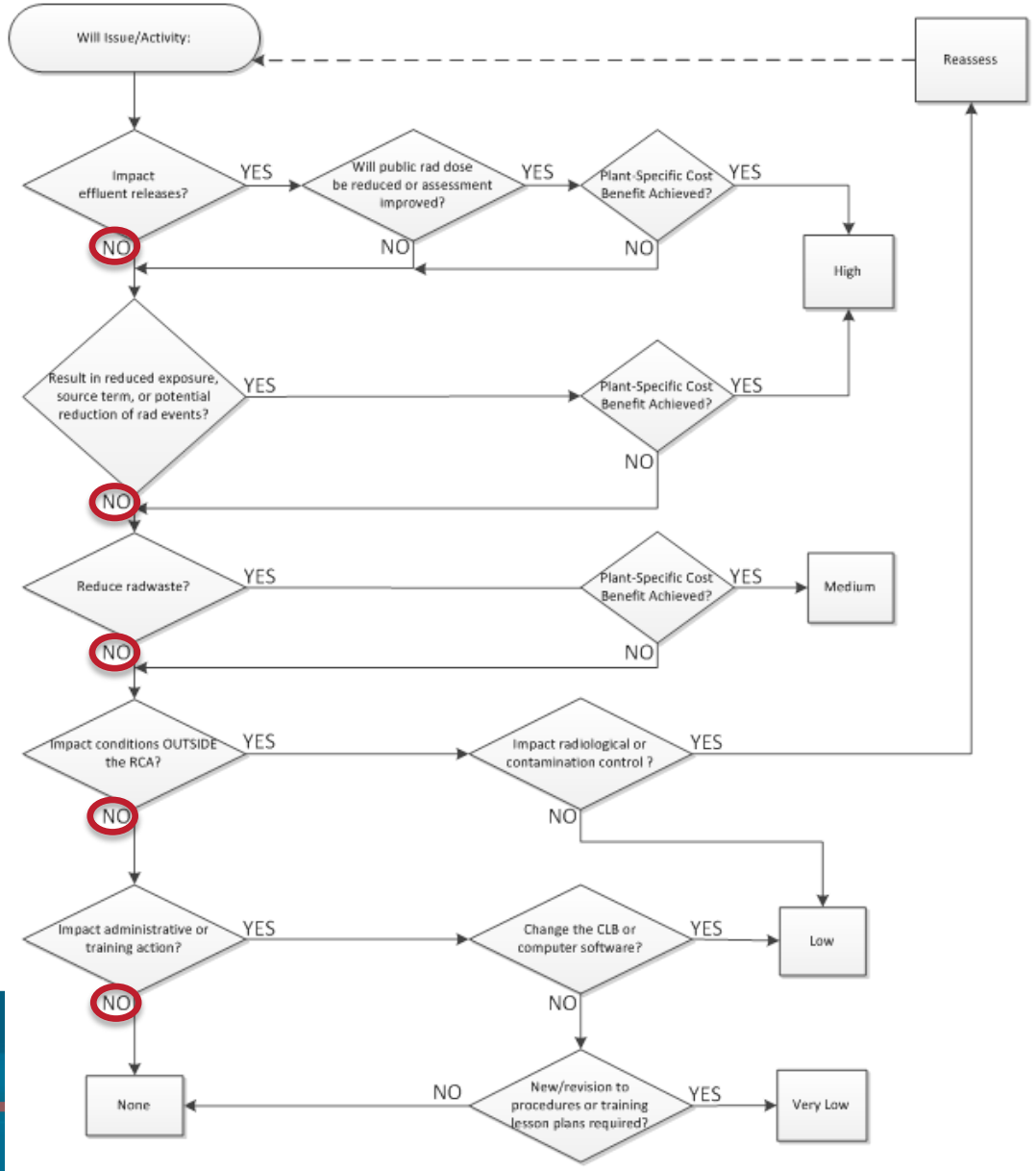
EP #3 – RP Importance – Step 1



EP #3 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO Is there a significant risk of SSC failure?

2. ☐ YES ☒ NO Is there a significant replacement lead time?

3. ☐ YES ☒ NO Is there an obsolescence issue?

4. ☐ YES ☒ NO Is there an impact on plant reliability?

5. ☐ YES ☒ NO Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

EP #3 – Other Considerations

EP #3 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
10CFR50, App E new protective actions	Very Low	None	Low	None	None	

EP Exercise #4

- Replace a site's Seismic Monitoring System (SMS) with a newer system to address obsolescence issues and failures on the existing system.
  - does not perform safety-related functions
  - is used to determine the level of seismic activity and possible continued operation of the plant during and after a seismic disturbance

EP #4 – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**

2. ☐ YES ☒ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**

3. ☐ YES ☒ NO **Result in an impact on the consequences of a risk significant accident sequence?**

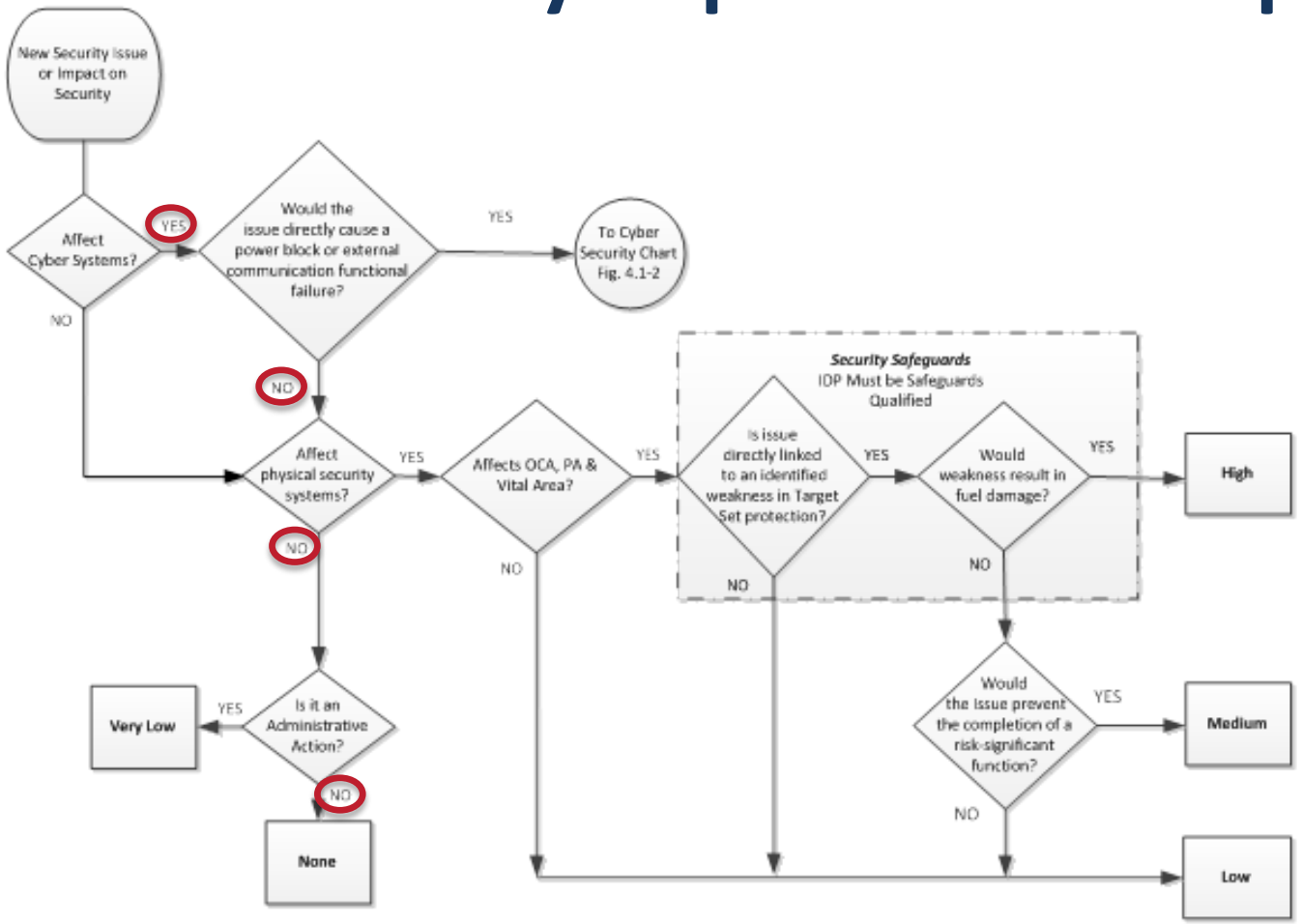
4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**

5. ☐ YES ☒ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

If ANY response is YES, continue on to Step 2.

EP #4 – Security Importance – Step 1



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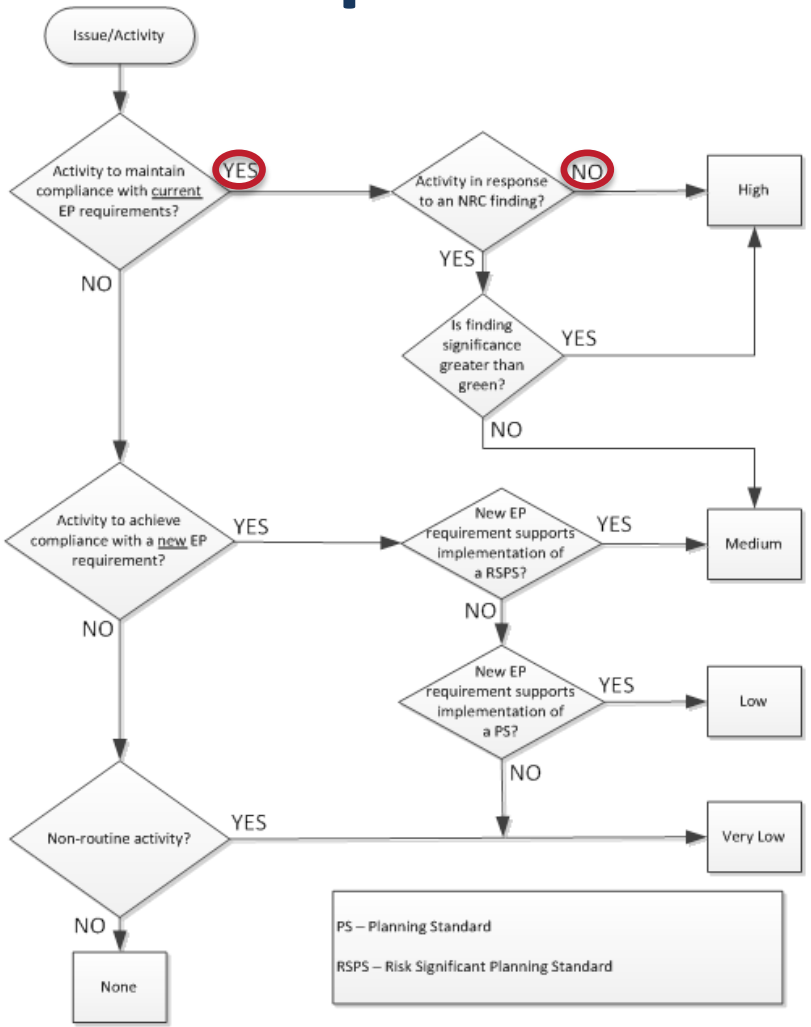
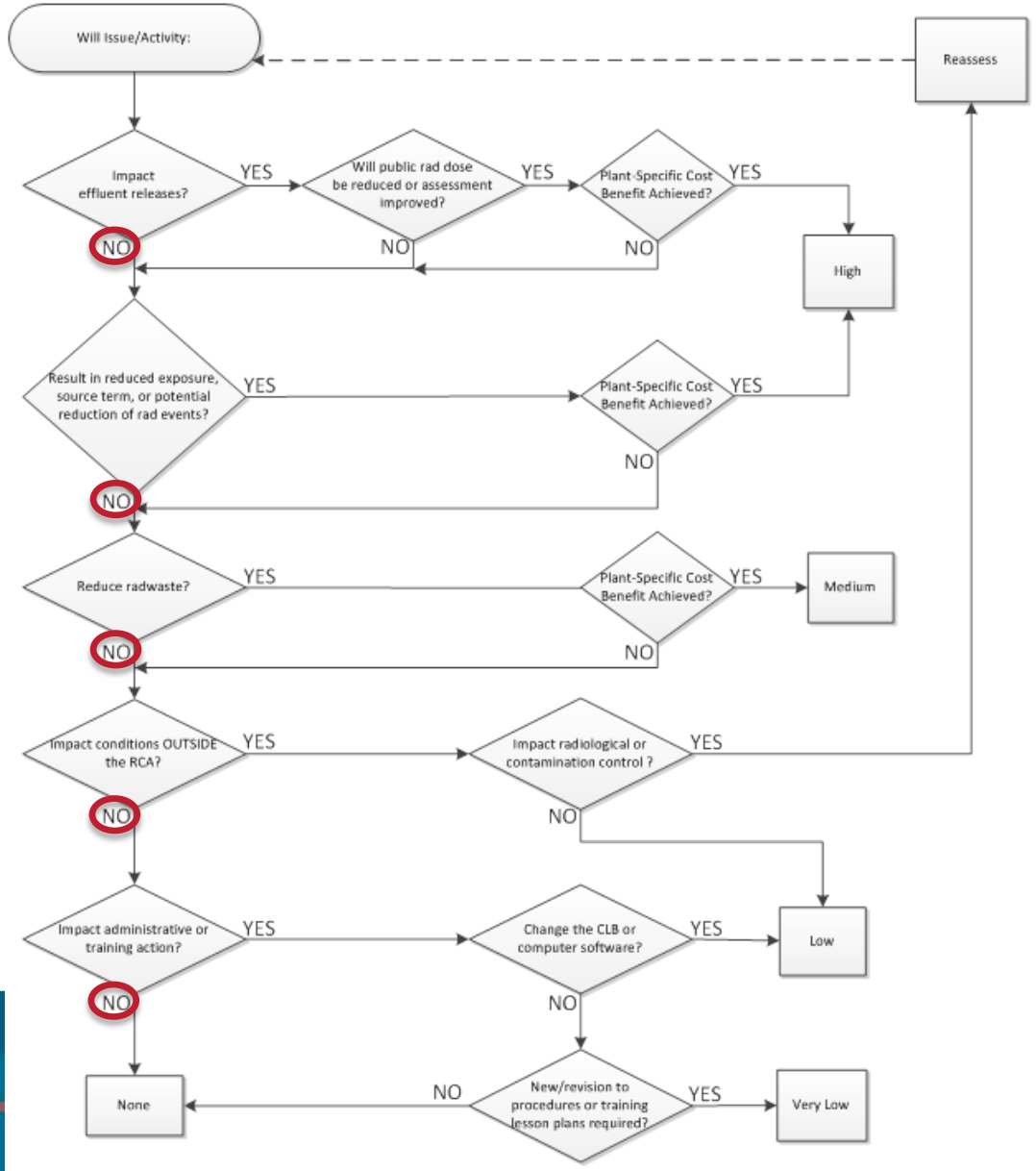
EP #4 – EP Importance – Step 1



EP #4 – EP Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

EP #4 – RP Importance – Step 1



EP #4 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☒ YES ☐ NO — **Is there a significant risk of SSC failure?**
2. ☒ YES ☐ NO — **Is there a significant replacement lead time?**
3. ☒ YES ☐ NO — **Is there an obsolescence issue?**
4. ☒ YES ☐ NO — **Is there an impact on plant reliability?**
5. ☒ YES ☐ NO — **Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

EP #4 – Reliability Importance – Step 2

Table 4-2 Matrix by Urgency and Potential Impact

Time frame (in operating cycles) for action associated with the issue	**Potential Impact of Action Resolving Issue (Duration of Plant Outage Avoided)**		
	Day(s)	Week(s)	Month(s)
	Importance		
Long (≥ 2)	Very Low	Low	Medium
Short (< 2)	Low	Medium	High

EP #4 – Other Considerations

EP #4 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
Replace SMS	None	None	High	None	Medium	

RP Exercise #1

- The plant's radiation monitoring system and equipment has degraded beyond design basis criteria. A portion of the plant's installed radiation monitoring system as described in the plant's licensing basis has degraded to the point where the radiation monitoring system is not operating as described in the FSAR, and plant staff are routinely relying on compensatory sampling.

- Proposed activity: Replace the radiation monitoring system such that the new one will operate as described in the FSAR.

RP #1 – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**
2. ☒ YES ☐ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. ☒ YES ☐ NO **Result in an impact on the consequences of a risk significant accident sequence?**
4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**
5. ☒ YES ☐ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

If ANY response is YES, continue on to Step 2.

RP #1 – Safety Importance – Step 2

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in more than a minimal decrease in frequency of occurrence of a risk significant accident initiator?**

2. ☐ YES ☒ NO **Result in more than a minimal improvement in the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**

3. ☐ YES ☒ NO **Result in more than a minimal decrease in the consequences of a risk significant accident sequence?**

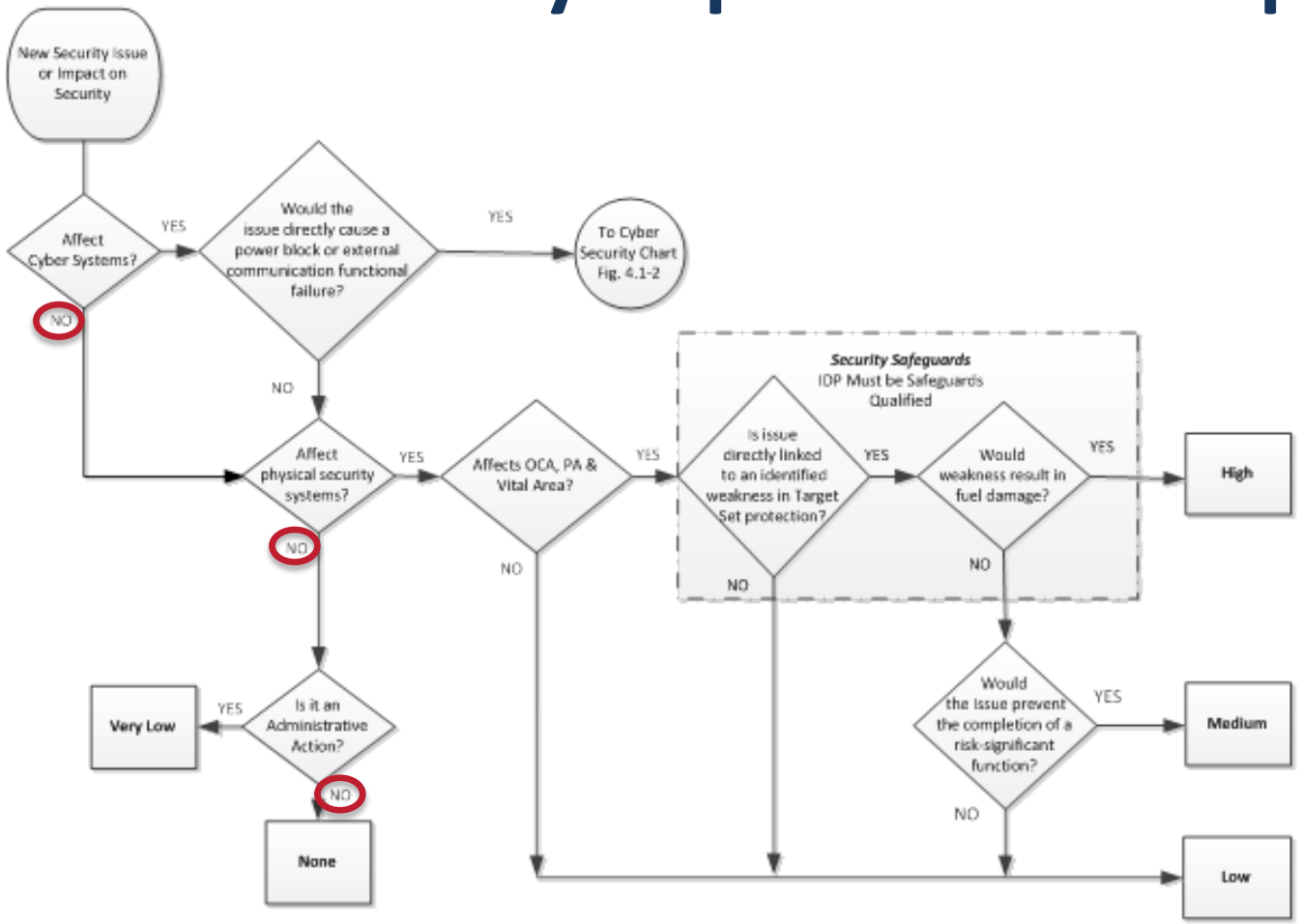
4. ☐ YES ☒ NO **Result in more than a minimal improvement in the capability of a fission product barrier?**

5. ☒ YES ☐ NO **Result in more than a minimal improvement in defense-in-depth capability or improvement in safety margin?**

If ALL the responses are NO, issue or activity screens to MINIMAL IMPACT and Nuclear Safety Importance is Very Low.

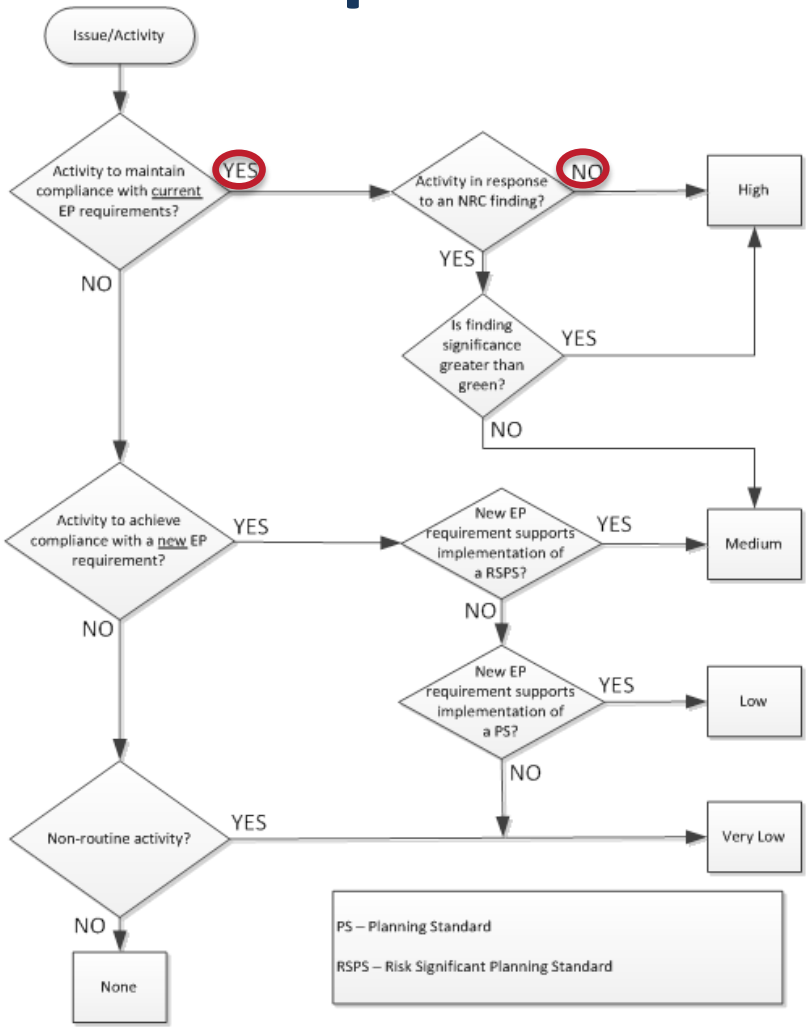
If ANY response is YES, continue on to Step 3.

RP #1 – Security Importance – Step 1



NOTE: As used in this document the term issue may be a cyber-security intrusion, a potential cyber-security intrusion, or a security action or potential action

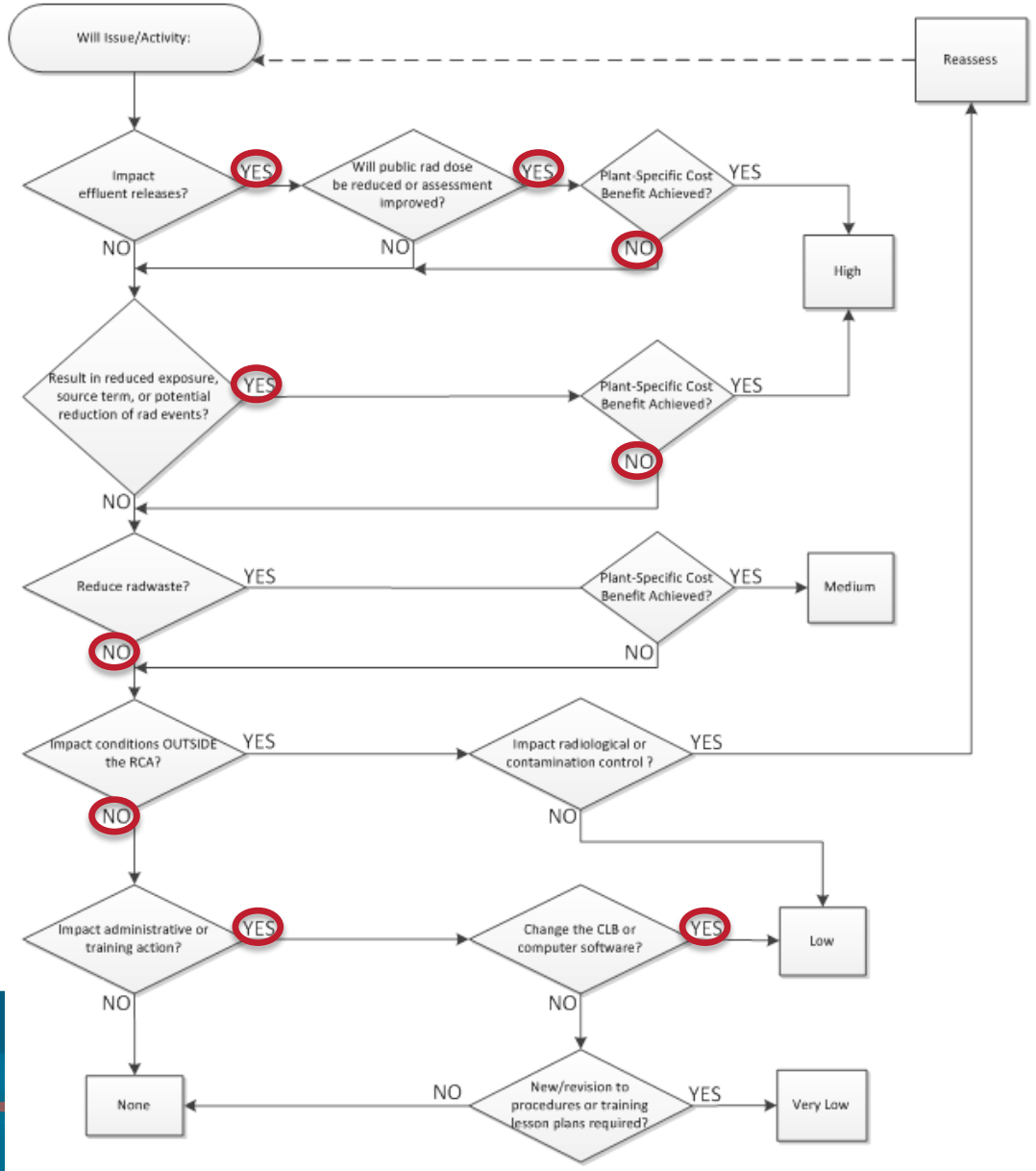
RP #1 – EP Importance – Step 1



RP #1 – EP Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

RP #1 – RP Importance – Step 1



RP #1 – RP Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

RP #1 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO Is there a significant risk of SSC failure?

2. ☒ YES ☐ NO Is there a significant replacement lead time?

3. ☒ YES ☐ NO Is there an obsolescence issue?

4. ☐ YES ☒ NO Is there an impact on plant reliability?

5. ☒ YES ☐ NO Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

RP #1 – Reliability Importance – Step 2

Table 4-2 Matrix by Urgency and Potential Impact			
Time frame (in operating cycles) for action associated with the issue	**Potential Impact of Action Resolving Issue (Duration of Plant Outage Avoided)**		
	Day(s)	Week(s)	Month(s)
	Importance		
Long (≥ 2)	Very Low	Low	Medium
Short (< 2)	Low	Medium	High

RP #1 – Other Considerations

- Ops burden: routinely relying on compensatory sampling

RP #1 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
Degraded Radiation Monitoring capability	Very Low	None	High	Low	None	

RP Exercise #2a

- A significant failed fuel event has occurred and the plant's radiological conditions are degraded to the extent that radioactive effluent releases are approaching the design basis limits. In addition, adequate personnel safety is hindered.
- Proposed activity: identify and remove failed fuel

RP #2a – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**
2. ☒ YES ☐ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. ☐ YES ☒ NO **Result in an impact on the consequences of a risk significant accident sequence?**
4. ☒ YES ☐ NO **Result in an impact on the capability of a fission product barrier?**
5. ☐ YES ☒ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

If ANY response is YES, continue on to Step 2.

RP #2a – Safety Importance – Step 2

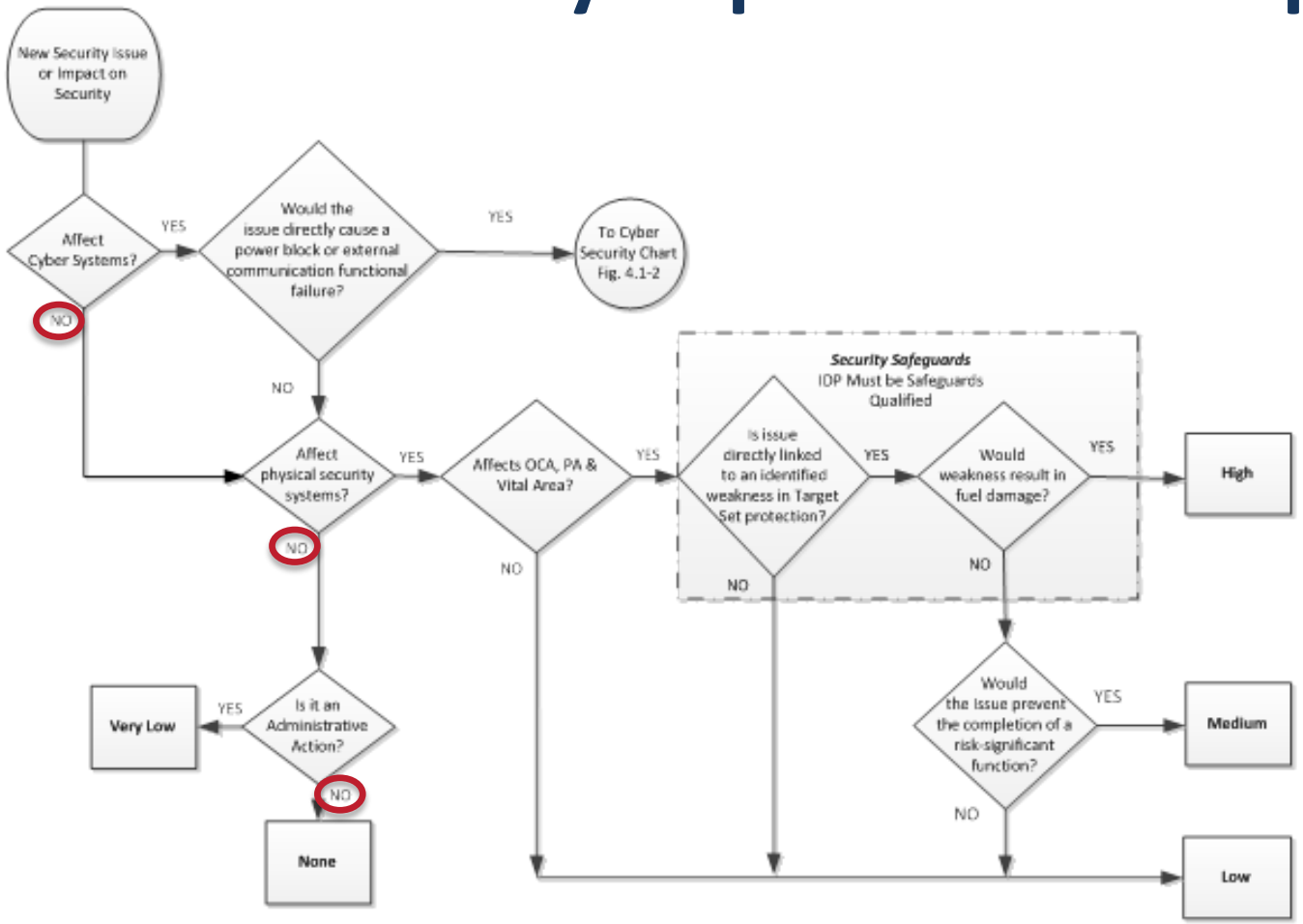
Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in more than a minimal decrease in frequency of occurrence of a risk significant accident initiator?**
2. ☐ YES ☒ NO **Result in more than a minimal improvement in the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. ☐ YES ☒ NO **Result in more than a minimal decrease in the consequences of a risk significant accident sequence?**
4. ☐ YES ☒ NO **Result in more than a minimal improvement in the capability of a fission product barrier?**
5. ☐ YES ☒ NO **Result in more than a minimal improvement in defense-in-depth capability or improvement in safety margin?**

If ALL the responses are NO, issue or activity screens to MINIMAL IMPACT and Nuclear Safety Importance is Very Low.

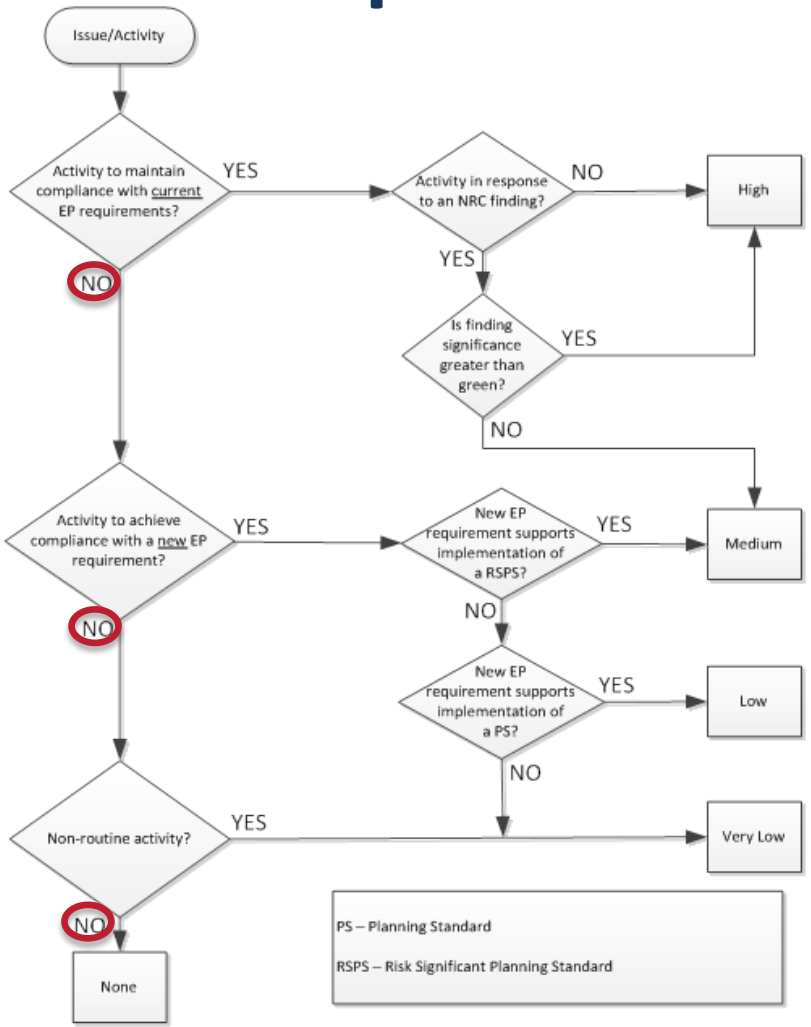
If ANY response is YES, continue on to Step 3.

RP #2a – Security Importance – Step 1

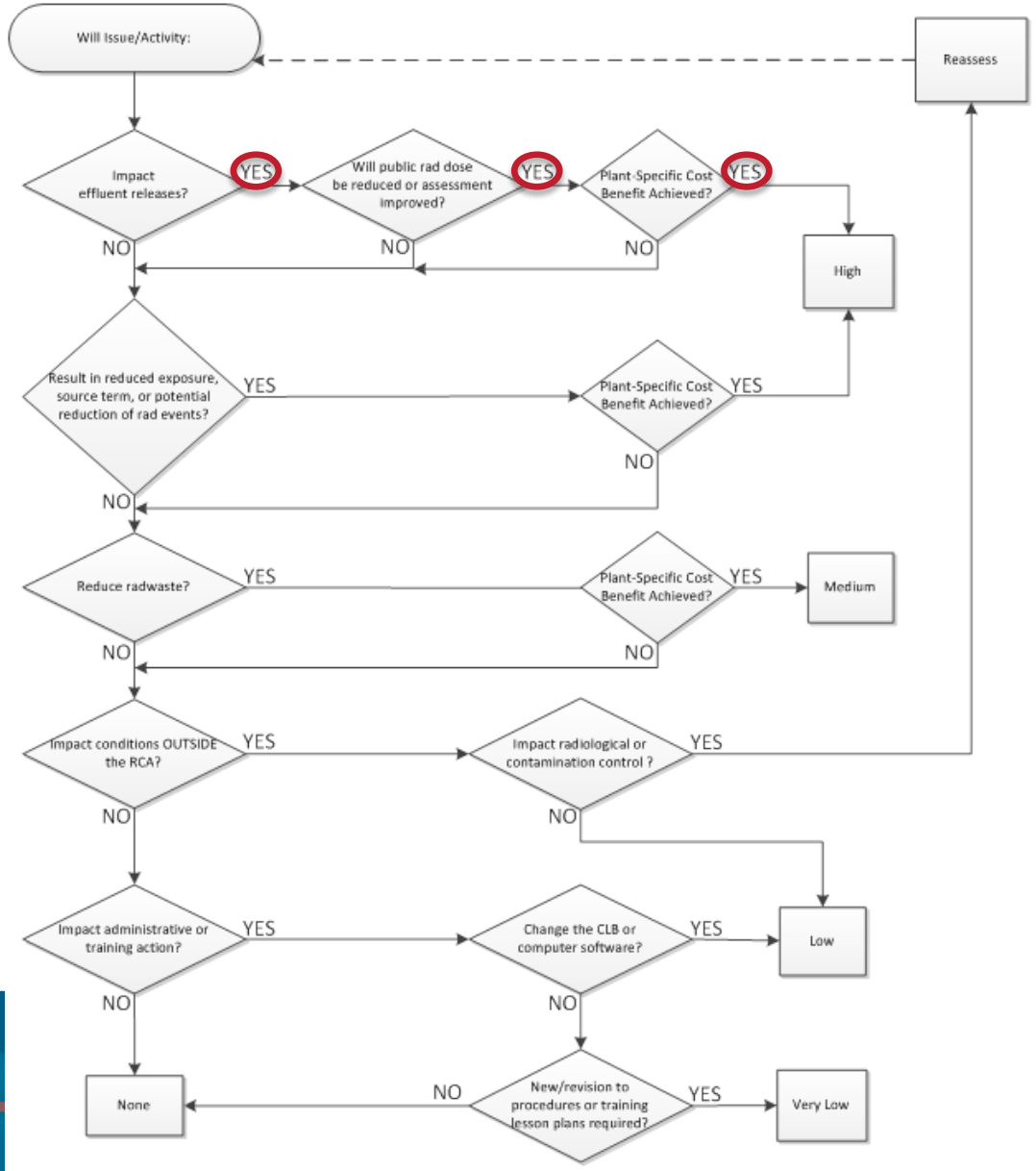


NOTE: As used in this document the term issue may be a cyber-security intrusion, a potential cyber-security intrusion, or a security action or potential action

RP #2a – EP Importance – Step 1



RP #2a – RP Importance – Step 1



RP #2a – RP Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

RP #2a – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO **Is there a significant risk of SSC failure?**
2. ☐ YES ☒ NO **Is there a significant replacement lead time?**
3. ☐ YES ☒ NO **Is there an obsolescence issue?**
4. ☐ YES ☒ NO **Is there an impact on plant reliability?**
5. ☐ YES ☒ NO **Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

RP #2a – Other Considerations

- Personnel burden: operator rounds, chemistry sampling and analysis capability, or maintenance becomes abnormally difficult with work-a-rounds due to excessive radiological conditions.
- Compensatory measures are in place such that plant personnel must routinely take alternative measures and modify their procedures in order to perform their functions.

RP #2a Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
Degraded Radiological Conditions	Very Low	None	None	High	None	

RP Exercise #2b

- A significant failed fuel event has occurred and the plant's radiological conditions are degraded to the extent that adequate personnel safety is hindered, the capability to perform periodic inspection and testing of components is restricted, shielding for personnel radiation protection is needed, and/or there is inadequate containment, confinement, and filtering of radioactive material.
- Proposed activity: perform an aggressive decontamination process, and install additional shielding to reduce radiation levels to ALARA

RP #2b – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**
2. ☒ YES ☐ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. ☐ YES ☒ NO **Result in an impact on the consequences of a risk significant accident sequence?**
4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**
5. ☐ YES ☒ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

If ANY response is YES, continue on to Step 2.

RP #2b – Safety Importance – Step 2

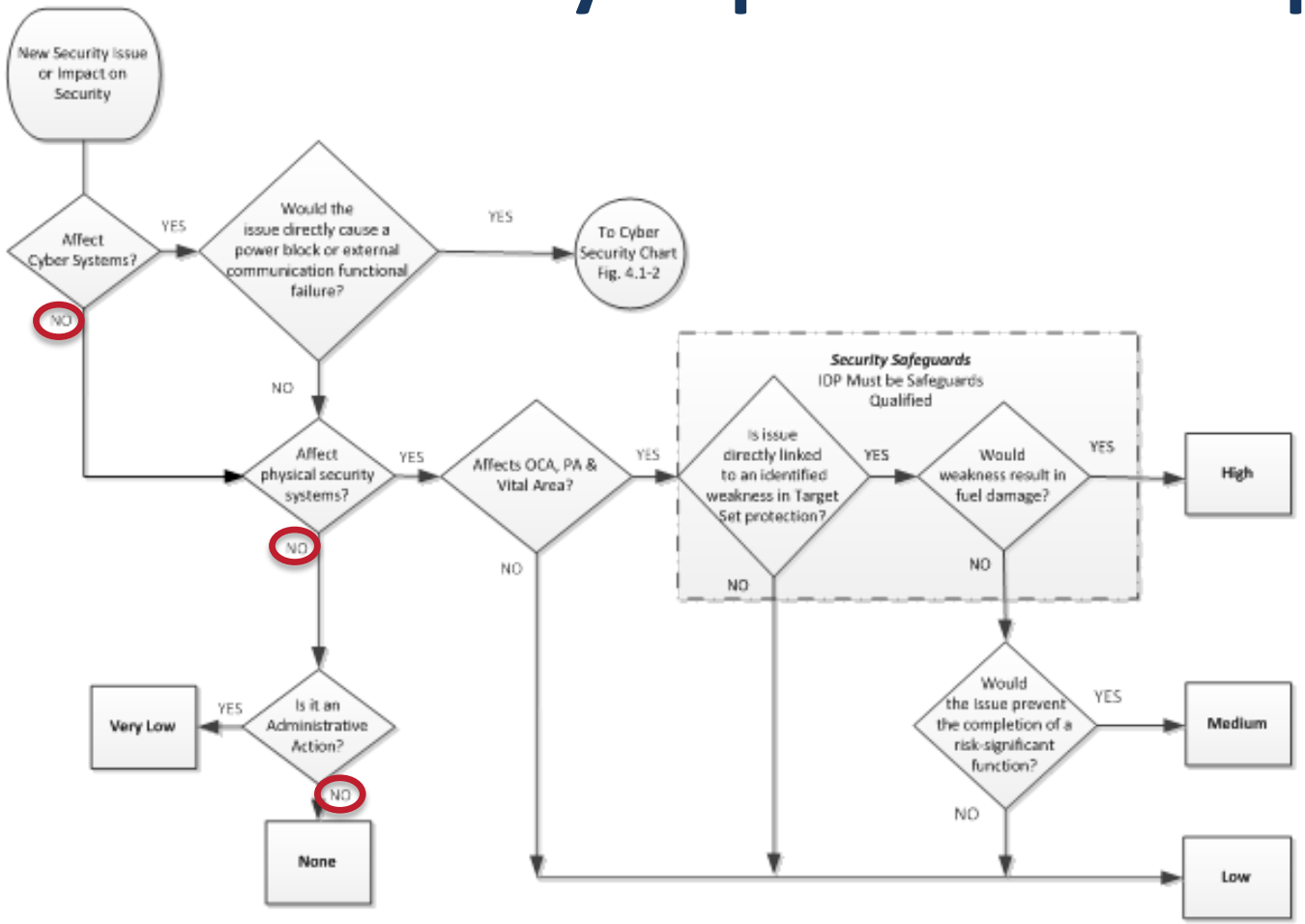
Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in more than a minimal decrease in frequency of occurrence of a risk significant accident initiator?**
2. ☐ YES ☒ NO **Result in more than a minimal improvement in the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. ☐ YES ☒ NO **Result in more than a minimal decrease in the consequences of a risk significant accident sequence?**
4. ☐ YES ☒ NO **Result in more than a minimal improvement in the capability of a fission product barrier?**
5. ☐ YES ☒ NO **Result in more than a minimal improvement in defense-in-depth capability or improvement in safety margin?**

If ALL the responses are NO, issue or activity screens to MINIMAL IMPACT and Nuclear Safety Importance is Very Low.

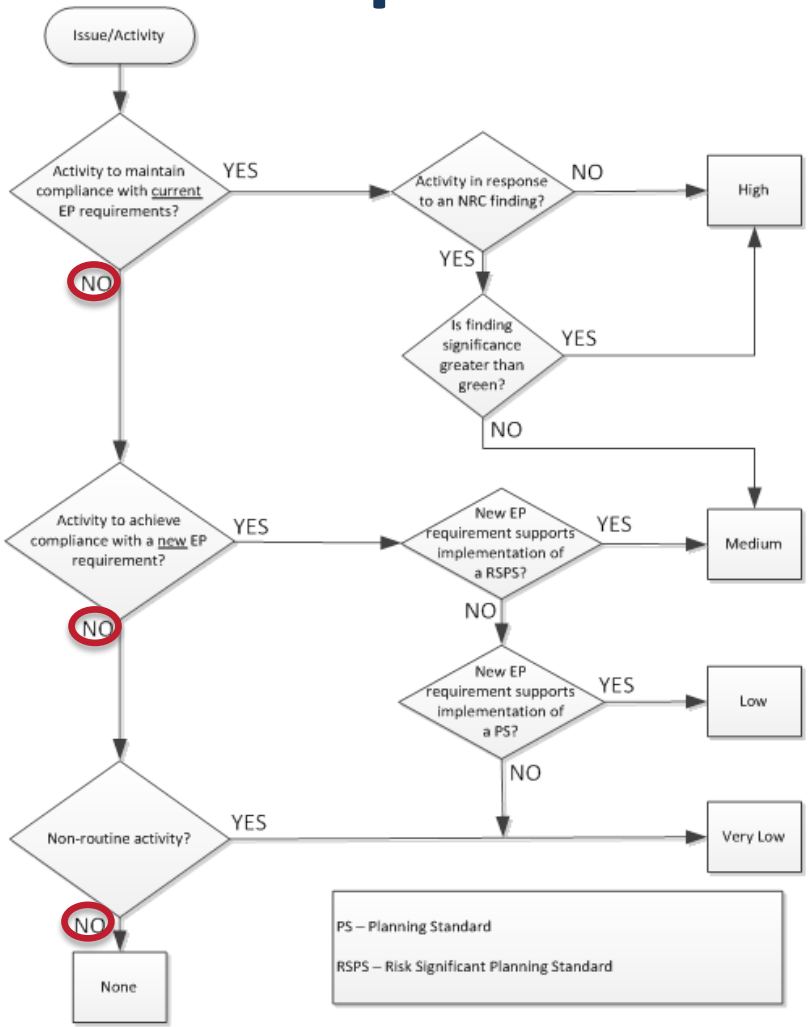
If ANY response is YES, continue on to Step 3.

RP #2b – Security Importance – Step 1

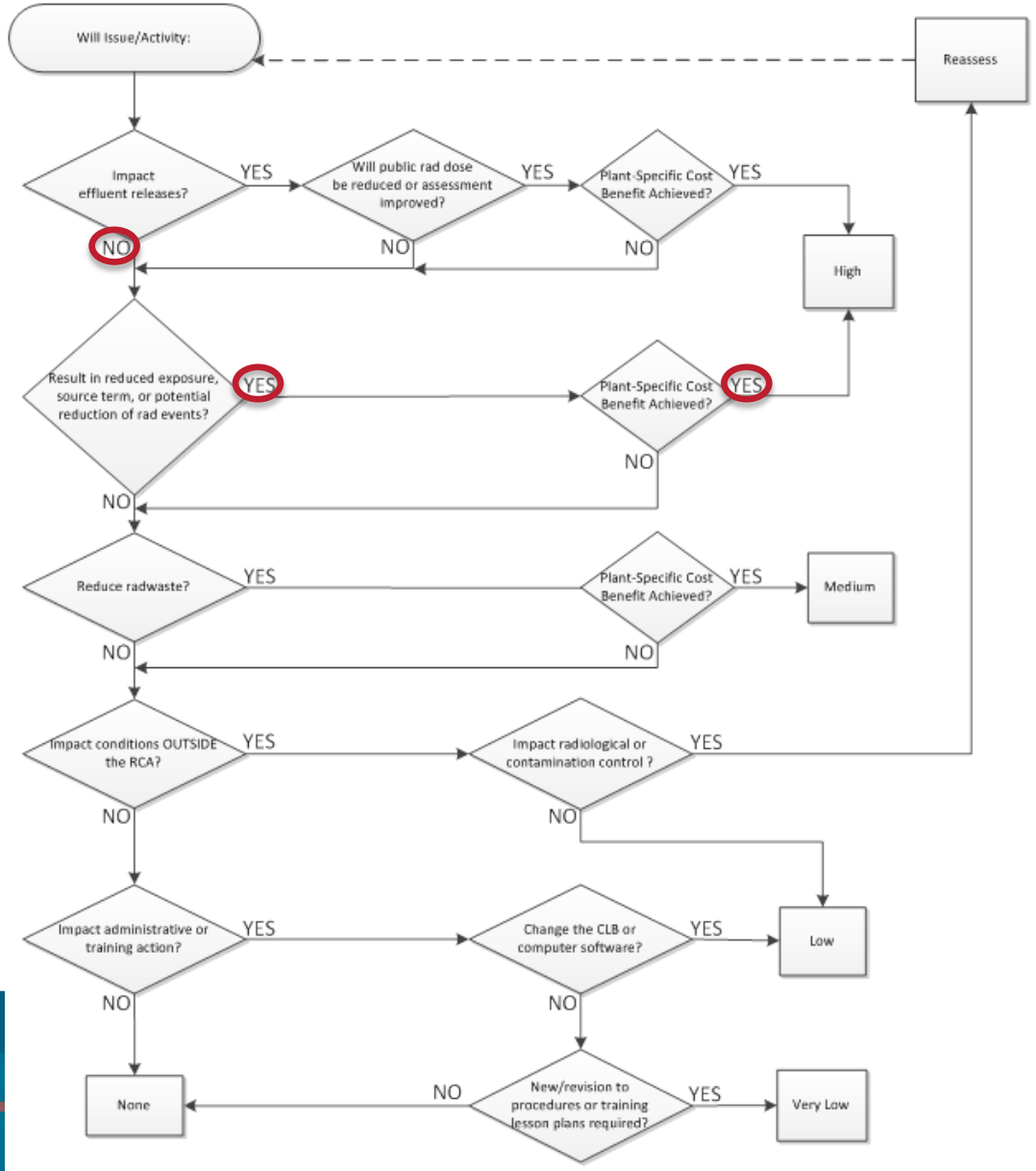


NOTE: As used in this document the term issue may be a cyber-security intrusion, a potential cyber-security intrusion, or a security action or potential action

RP #2b – EP Importance – Step 1



RP #2b – RP Importance – Step 1



RP #2b – RP Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

RP #2b – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO — **Is there a significant risk of SSC failure?**
2. ☐ YES ☒ NO — **Is there a significant replacement lead time?**
3. ☐ YES ☒ NO — **Is there an obsolescence issue?**
4. ☐ YES ☒ NO — **Is there an impact on plant reliability?**
5. ☐ YES ☒ NO — **Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

RP #2b – Other Considerations

- Personnel burden: operator rounds, chemistry sampling and analysis capability, or maintenance becomes abnormally difficult with work-a-rounds due to excessive radiological conditions.
- Compensatory measures are in place such that plant personnel must routinely take alternative measures and modify their procedures in order to perform their functions.

RP #2b Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
Degraded Radiological Conditions	Very Low	None	None	High	None	

RP Exercise #3

- A revision to 10 CFR 50, Appendix I has been proposed (see related Docket ID: NRC-2014-0044) with an associated regulatory requirement to revise Technical Specifications to conform to the new Appendix I. Assume an implementation date has been established within a 3 year time period. In order to implement the new regulatory requirements, a revision of the plant's effluent management system computer software is needed to analyze the radiological impact of effluent releases, a revision of plant procedures and training are required.

RP #3 – Safety Importance – Step 1

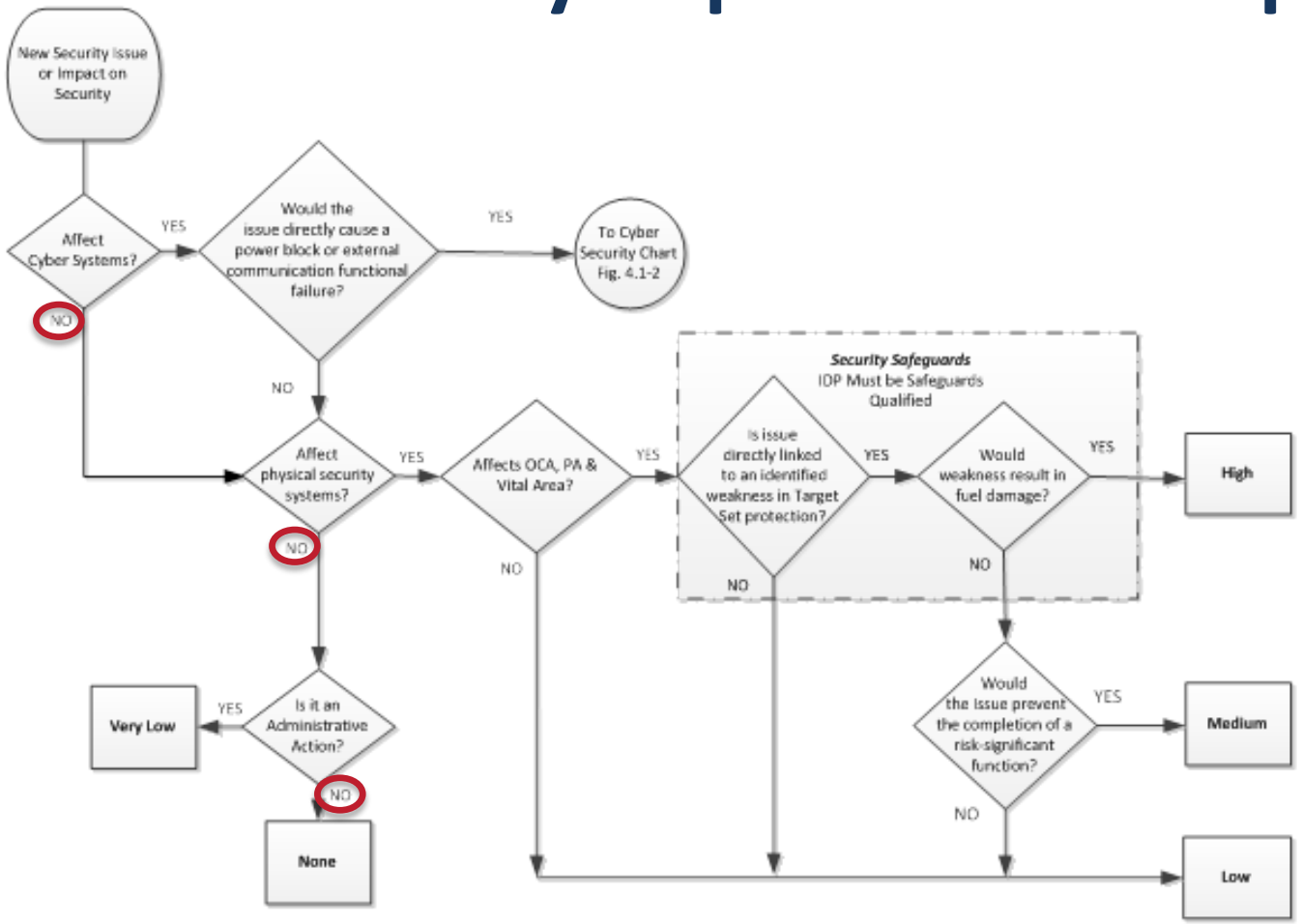
Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**
2. ☐ YES ☒ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. ☐ YES ☒ NO **Result in an impact on the consequences of a risk significant accident sequence?**
4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**
5. ☐ YES ☒ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

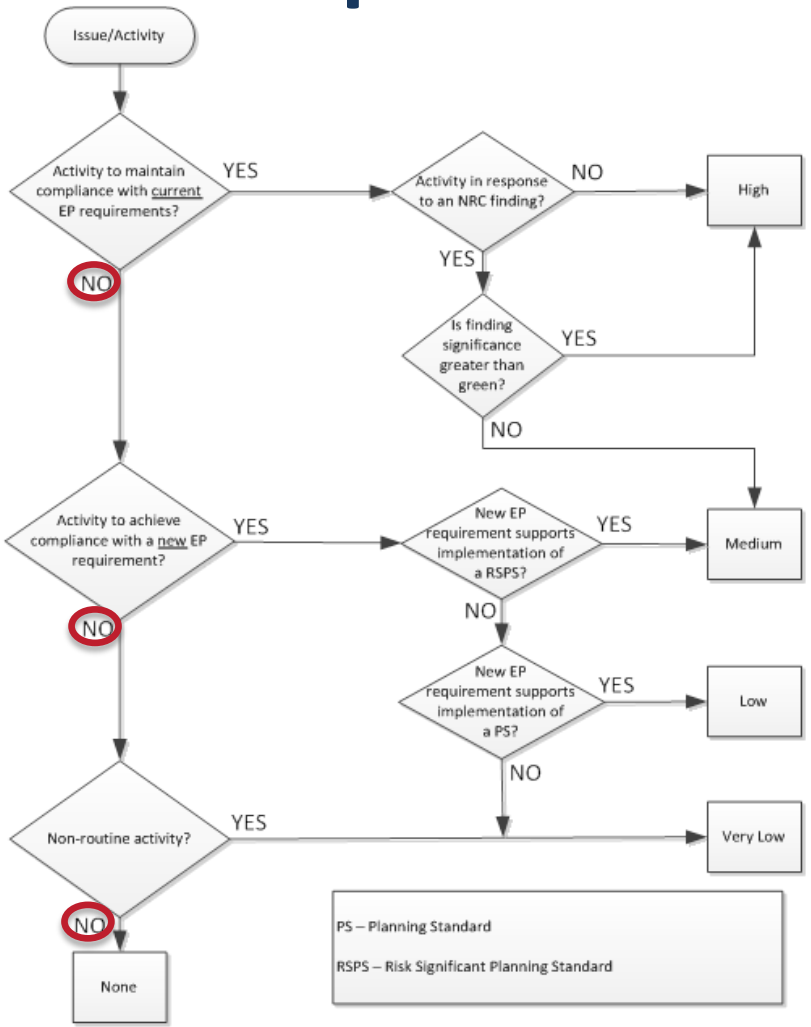
If ANY response is YES, continue on to Step 2.

RP #3 – Security Importance – Step 1

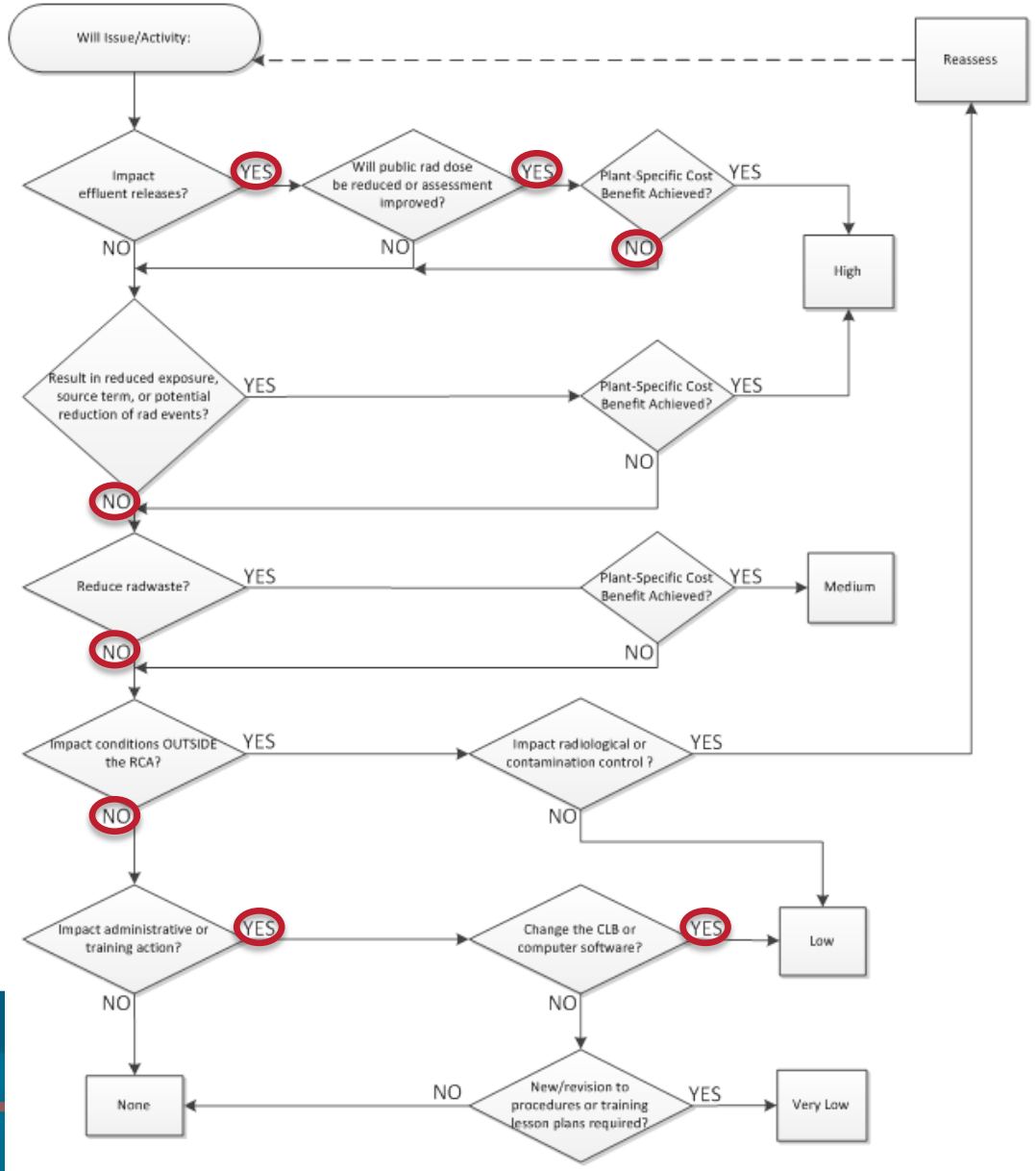


NOTE: As used in this document the term issue may be a cyber-security intrusion, a potential cyber-security intrusion, or a security action or potential action

RP #3 – EP Importance – Step 1



RP #3 – RP Importance – Step 1



RP #3 – RP Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

RP #3 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO — **Is there a significant risk of SSC failure?**
2. ☐ YES ☒ NO — **Is there a significant replacement lead time?**
3. ☐ YES ☒ NO — **Is there an obsolescence issue?**
4. ☐ YES ☒ NO — **Is there an impact on plant reliability?**
5. ☐ YES ☒ NO — **Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

RP #3 – Other Considerations

RP #3 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
10CFR50, App I revision	None	None	None	Low	None	

RP Exercise #4

- A revision of 10 CFR 20, “Standards for Protection Against Radiation” has been proposed (see related Docket ID NRC-2009-0279 (79 FR 43284) to align with ICRP-103. Assume an implementation date has been proposed established within a 3 year time period. In order to implement the new regulatory requirements, a revision of plant radiological protection procedures and training of plant personnel is required.
- We will look at a change (reduction) in the dose limit to the lens of the eye.

RP #4 – Safety Importance – Step 1

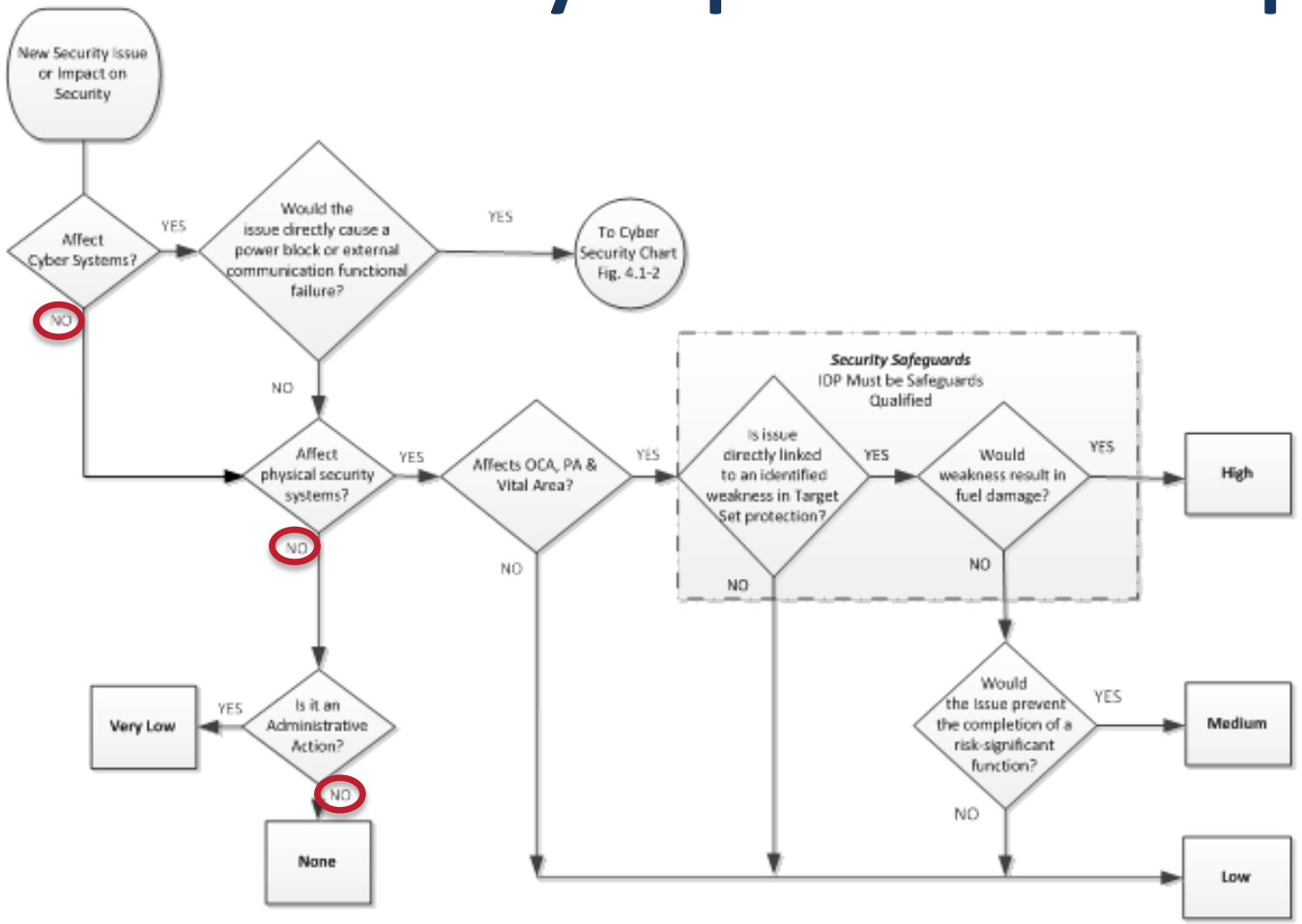
Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**
2. ☐ YES ☒ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. ☐ YES ☒ NO **Result in an impact on the consequences of a risk significant accident sequence?**
4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**
5. ☐ YES ☒ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

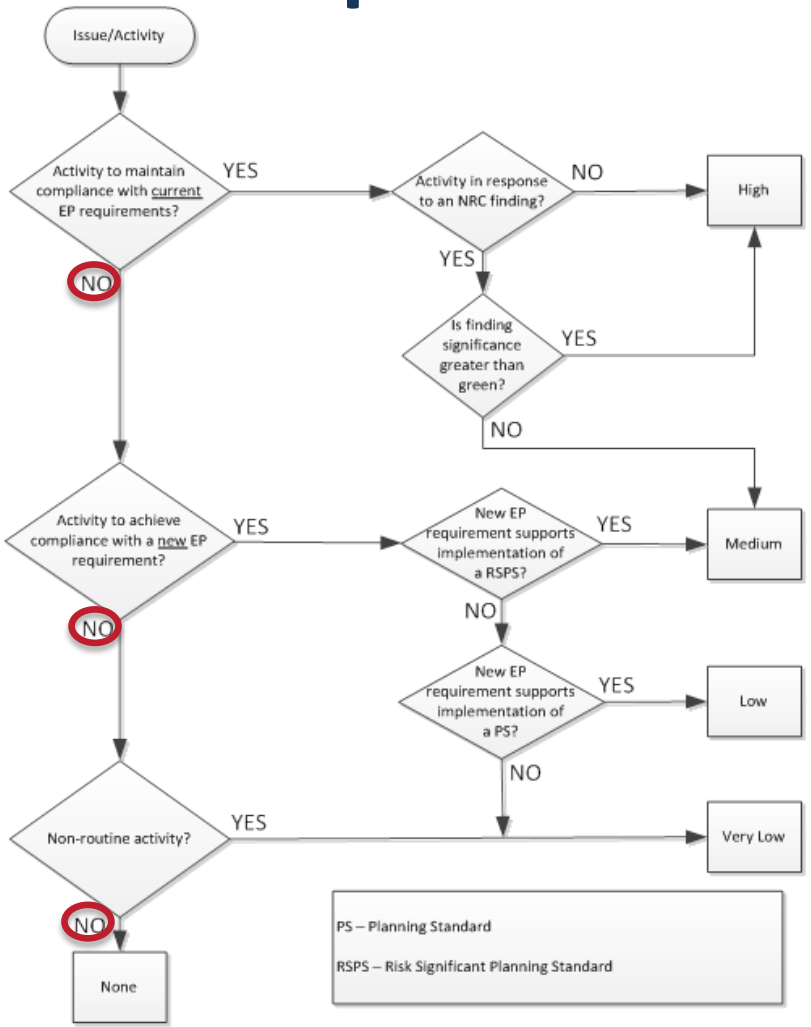
If ANY response is YES, continue on to Step 2.

RP #4 – Security Importance – Step 1

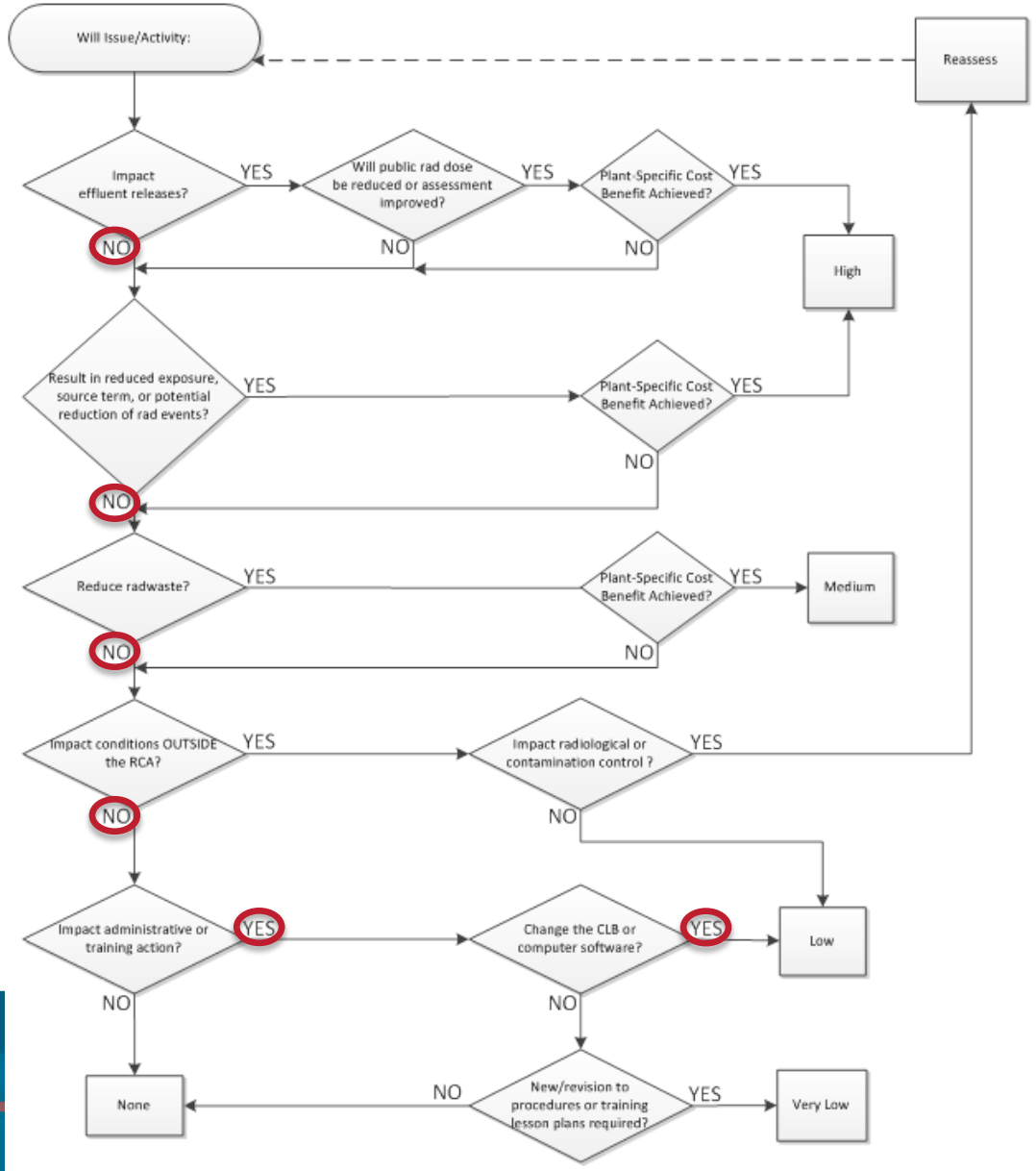


NOTE: As used in this document the term issue may be a cyber-security intrusion, a potential cyber-security intrusion, or a security action or potential action

RP #4 – EP Importance – Step 1



RP #4 – RP Importance – Step 1



RP #4 – RP Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

RP #4 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO Is there a significant risk of SSC failure?

2. ☐ YES ☒ NO Is there a significant replacement lead time?

3. ☐ YES ☒ NO Is there an obsolescence issue?

4. ☐ YES ☒ NO Is there an impact on plant reliability?

5. ☐ YES ☒ NO Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

RP #4 – Other Considerations

RP #4 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
10CFR20 revise dose limit to lens of the eye	None	None	None	Low	None	

Security Exercise #1

- A single Bullet Resistant Enclosure (BRE) has been deemed uninhabitable due to the confirmed presence of toxic mold. This has resulted in the implementation of several compensatory measures including the assignment of dedicated individuals being required to stand watch of the area of PA/OCA normally under the observation by the individuals within the now unusable BRE. These individuals are conducting their observation from other posts located adjacent to the now unusable BRE.
- Site facilities maintenance will be required to conduct mold remediation and HVAC system upgrades to address the toxic condition and its underlying cause.

Security #1 – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**

2. ☐ YES ☒ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**

3. ☐ YES ☒ NO **Result in an impact on the consequences of a risk significant accident sequence?**

4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**

5. ☐ YES ☒ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

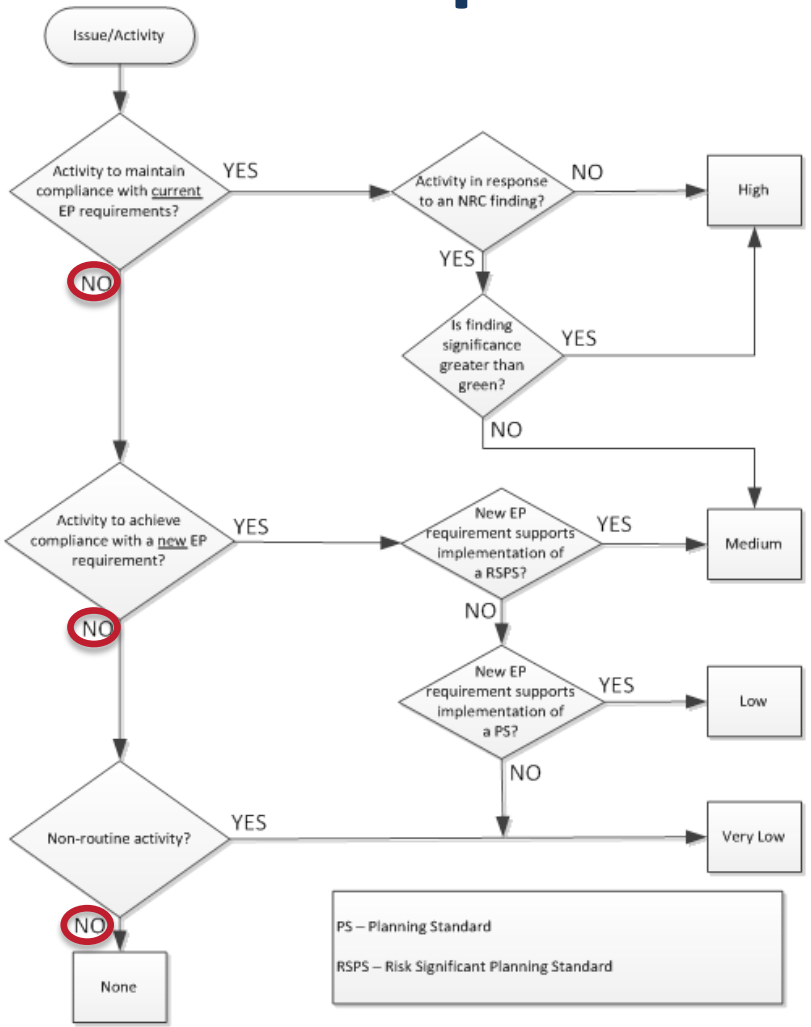
If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

If ANY response is YES, continue on to Step 2.

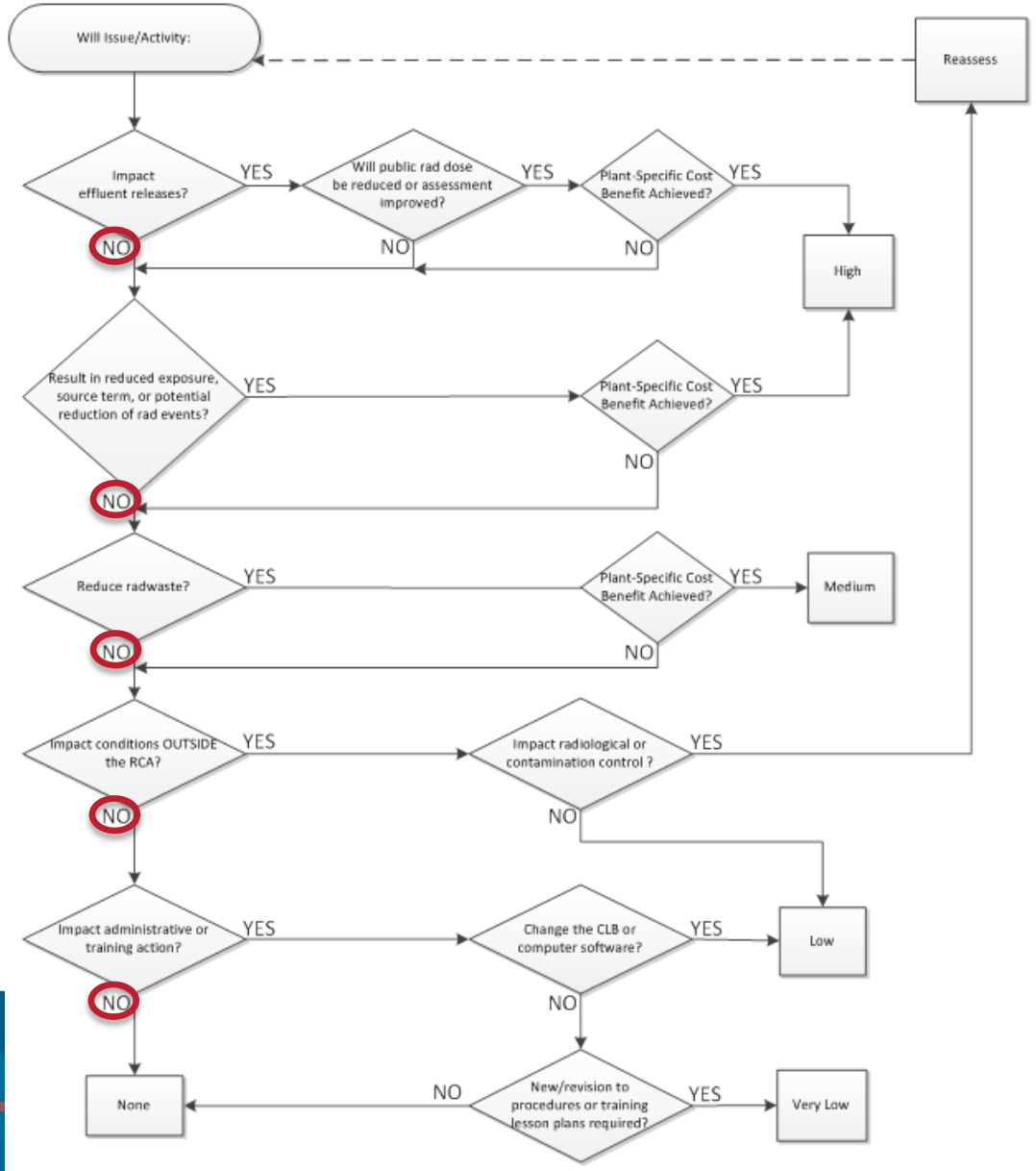
Security #1 – Security Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

Security #1 – EP Importance – Step 1



Security #1 – RP Importance – Step 1



Security #1 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO Is there a significant risk of SSC failure?

2. ☐ YES ☒ NO Is there a significant replacement lead time?

3. ☐ YES ☒ NO Is there an obsolescence issue?

4. ☐ YES ☒ NO Is there an impact on plant reliability?

5. ☐ YES ☒ NO Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

Security #1 – Other Considerations

- Security burden: dedicated individuals required to stand watch of the area of PA/OCA normally under the observation by the individuals within the now unusable BRE
  - conducting observation from other posts located adjacent to the now unusable BRE

Security #1 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
Toxic mold in BRE	None	Low	None	None	None	

Security Exercise #2

- The Protected Area (PA) entrance portal inboard Pop-Up Barrier was damaged when a site vehicle came in contact with the barrier as it was being deployed. The barrier is part of the PA boundary and compensatory measures have been placed into service.
- Site maintenance must perform corrective maintenance to restore the barrier to operable status.

Security #2 – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**
2. ☐ YES ☒ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. ☐ YES ☒ NO **Result in an impact on the consequences of a risk significant accident sequence?**
4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**
5. ☒ YES ☐ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

If ANY response is YES, continue on to Step 2.

Security #2 – Safety Importance – Step 2

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in more than a minimal decrease in frequency of occurrence of a risk significant accident initiator?**

2. ☐ YES ☒ NO **Result in more than a minimal improvement in the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**

3. ☐ YES ☒ NO **Result in more than a minimal decrease in the consequences of a risk significant accident sequence?**

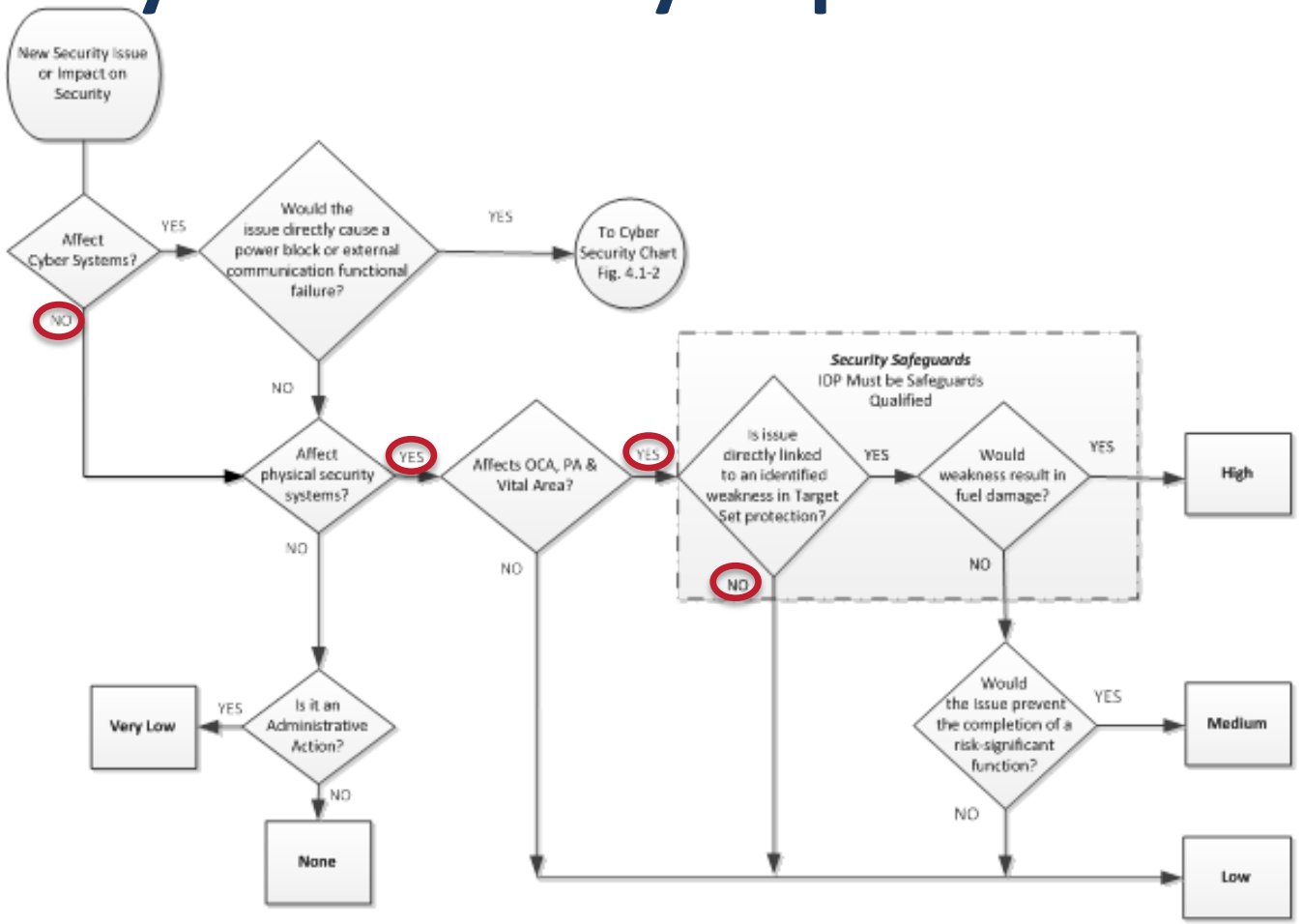
4. ☐ YES ☒ NO **Result in more than a minimal improvement in the capability of a fission product barrier?**

5. ☐ YES ☒ NO **Result in more than a minimal improvement in defense-in-depth capability or improvement in safety margin?**

If ALL the responses are NO, issue or activity screens to MINIMAL IMPACT and Nuclear Safety Importance is Very Low.

If ANY response is YES, continue on to Step 3.

Security #2 – Security Importance – Step 1

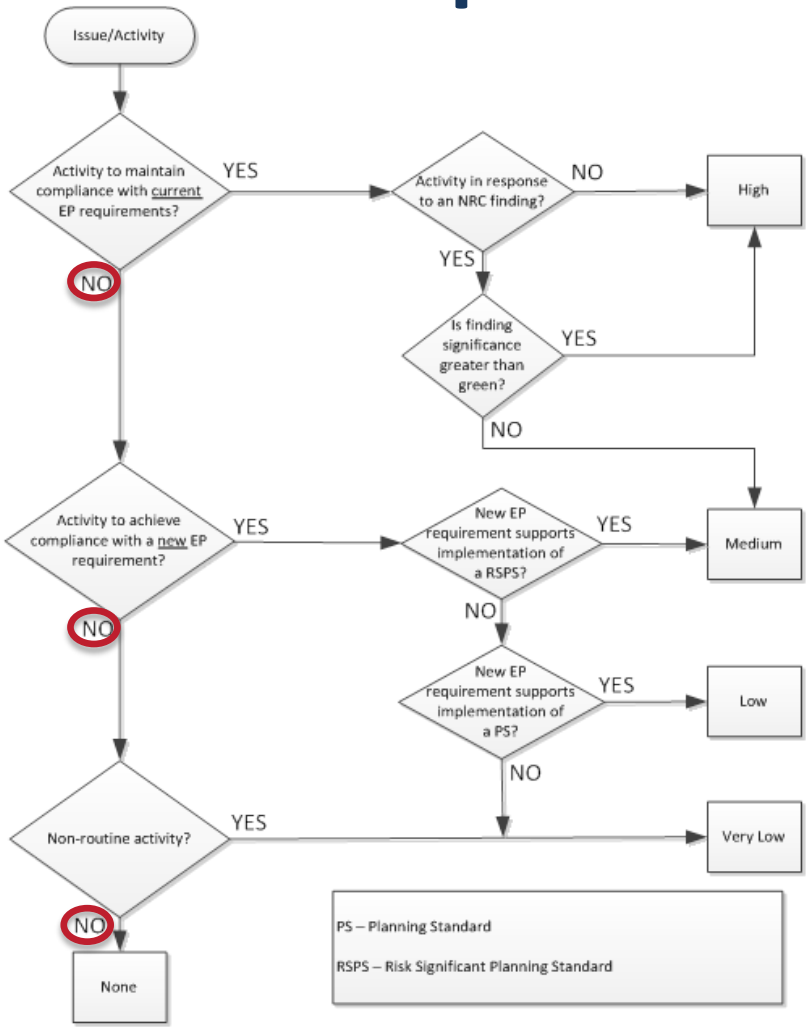


NOTE: As used in this document the term issue may be a cyber-security intrusion, a potential cyber-security intrusion, or a security action or potential action

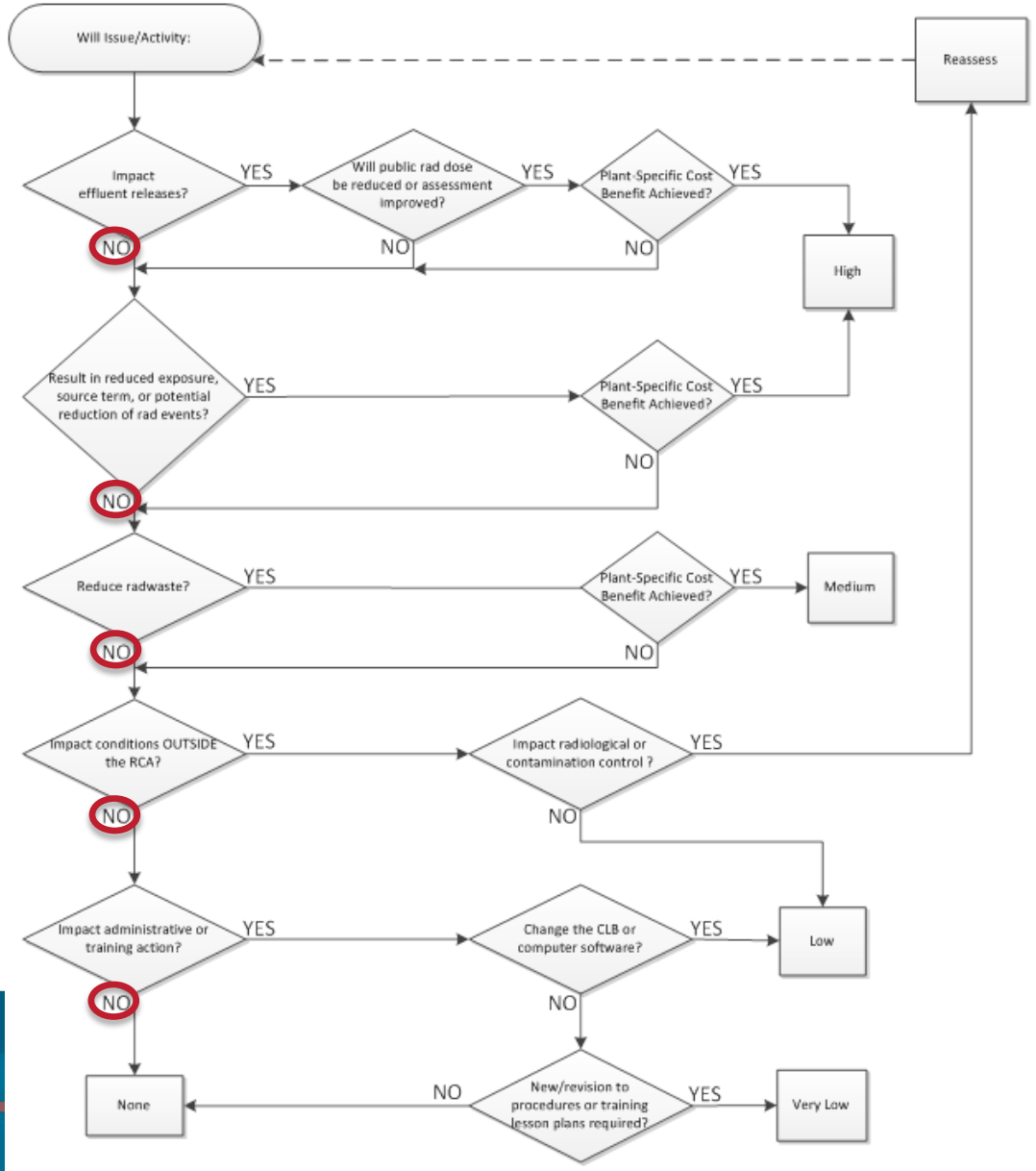
Security #2 – Security Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

Security #2 – EP Importance – Step 1



Security #2 – RP Importance – Step 1



Security #2 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO Is there a significant risk of SSC failure?

2. ☐ YES ☒ NO Is there a significant replacement lead time?

3. ☐ YES ☒ NO Is there an obsolescence issue?

4. ☐ YES ☒ NO Is there an impact on plant reliability?

5. ☐ YES ☒ NO Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

Security #2 – Other Considerations

- Security burden: compensatory measures in place

Security #2 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
Damaged pop-up barrier	Very Low	Low	None	None	None	

Security Exercise #3

- The site armorer was notified by the manufacturer of the site's contingency weapons supply that a significant number of the site's primary contingency response weapons will require modification to address a recognized deficiency which has been demonstrated to cause premature degradation of the weapons internal components.
- At this time all subject weapons are considered operable, but they will require significant rebuild prior to their reaching previously establish service thresholds. The site armorer has indicated this workload will be beyond his ability to maintain the required number of weapons available for duty/training needs.

Security #3 – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**
2. ☒ YES ☐ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. ☐ YES ☒ NO **Result in an impact on the consequences of a risk significant accident sequence?**
4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**
5. ☒ YES ☐ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

If ANY response is YES, continue on to Step 2.

Security #3 – Safety Importance – Step 2

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in more than a minimal decrease in frequency of occurrence of a risk significant accident initiator?**

2. ☐ YES ☒ NO **Result in more than a minimal improvement in the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**

3. ☐ YES ☒ NO **Result in more than a minimal decrease in the consequences of a risk significant accident sequence?**

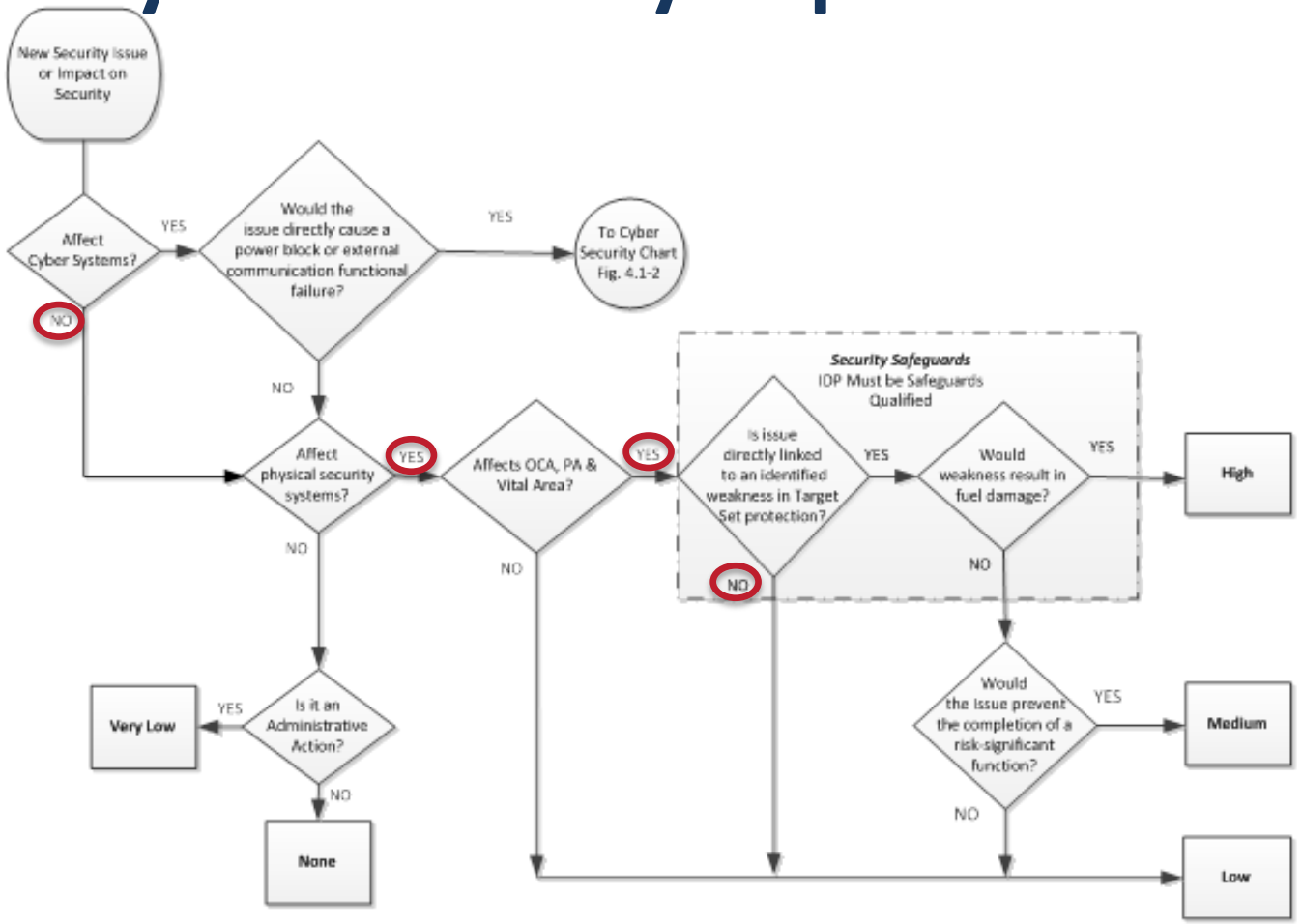
4. ☐ YES ☒ NO **Result in more than a minimal improvement in the capability of a fission product barrier?**

5. ☐ YES ☒ NO **Result in more than a minimal improvement in defense-in-depth capability or improvement in safety margin?**

If ALL the responses are NO, issue or activity screens to MINIMAL IMPACT and Nuclear Safety Importance is Very Low.

If ANY response is YES, continue on to Step 3.

Security #3 – Security Importance – Step 1

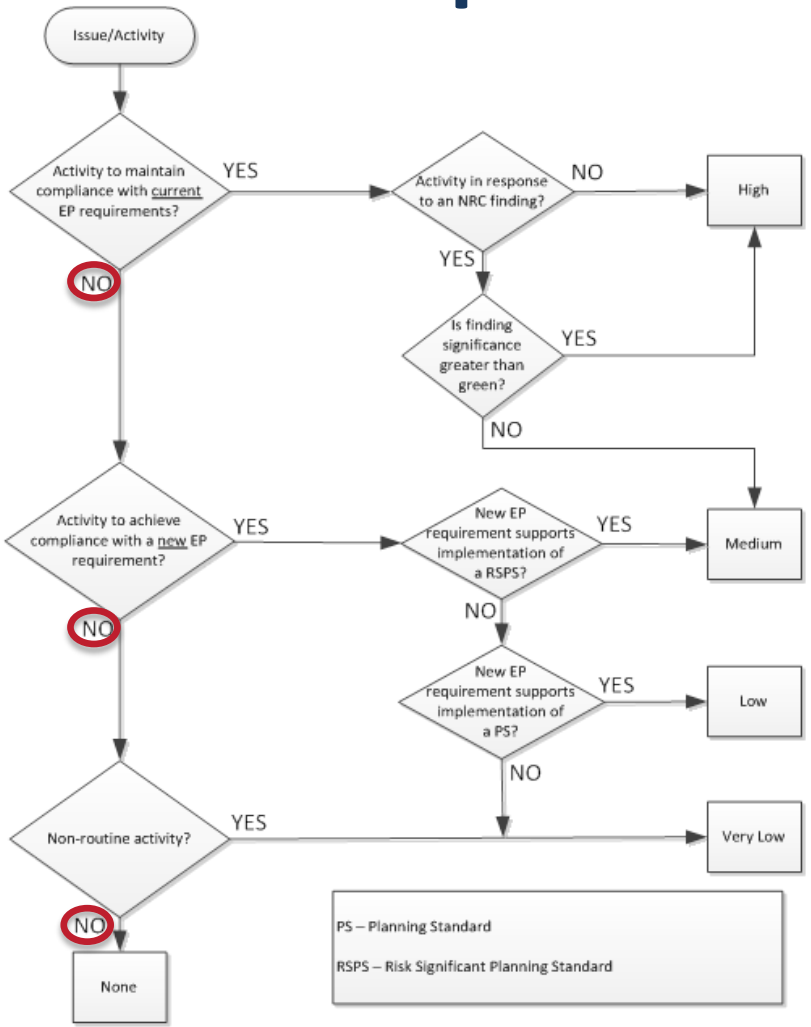


NOTE: As used in this document the term issue may be a cyber-security intrusion, a potential cyber-security intrusion, or a security action or potential action

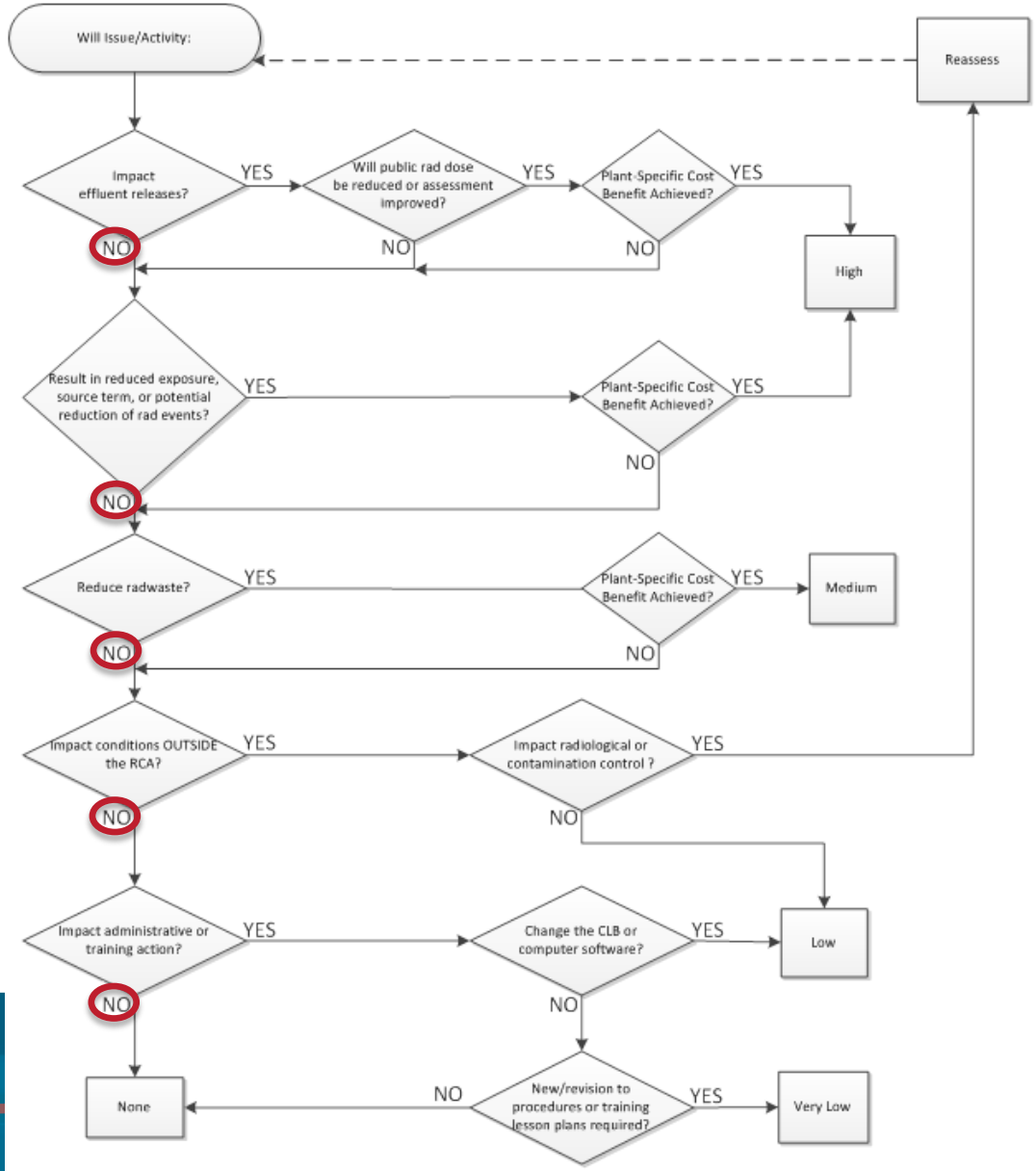
Security #3 – Security Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

Security #3 – EP Importance – Step 1



Security #3 – RP Importance – Step 1



Security #3 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☒ YES ☐ NO — Is there a significant risk of SSC failure?
2. ☒ YES ☐ NO — Is there a significant replacement lead time?
3. ☐ YES ☒ NO — Is there an obsolescence issue?
4. ☐ YES ☒ NO — Is there an impact on plant reliability?
5. ☐ YES ☒ NO — Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

Security #3 – Other Considerations

Security #3 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
Weapons require modification	Very Low	Low	None	None	Medium	

Security Exercise #4

- The site has been made aware of a HELB/MELB barrier (Watertight Door) being declared inoperable due to hinge failure. This door is integral to the site security mission to protect the target set defined equipment contained within the room behind the door.
- Return barrier to operable.

Security #4 – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**

2. ☒ YES ☐ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**

3. ☐ YES ☒ NO **Result in an impact on the consequences of a risk significant accident sequence?**

4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**

5. ☒ YES ☐ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

If ANY response is YES, continue on to Step 2.

Security #4 – Safety Importance – Step 2

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in more than a minimal decrease in frequency of occurrence of a risk significant accident initiator?**

2. ☐ YES ☒ NO **Result in more than a minimal improvement in the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**

3. ☐ YES ☒ NO **Result in more than a minimal decrease in the consequences of a risk significant accident sequence?**

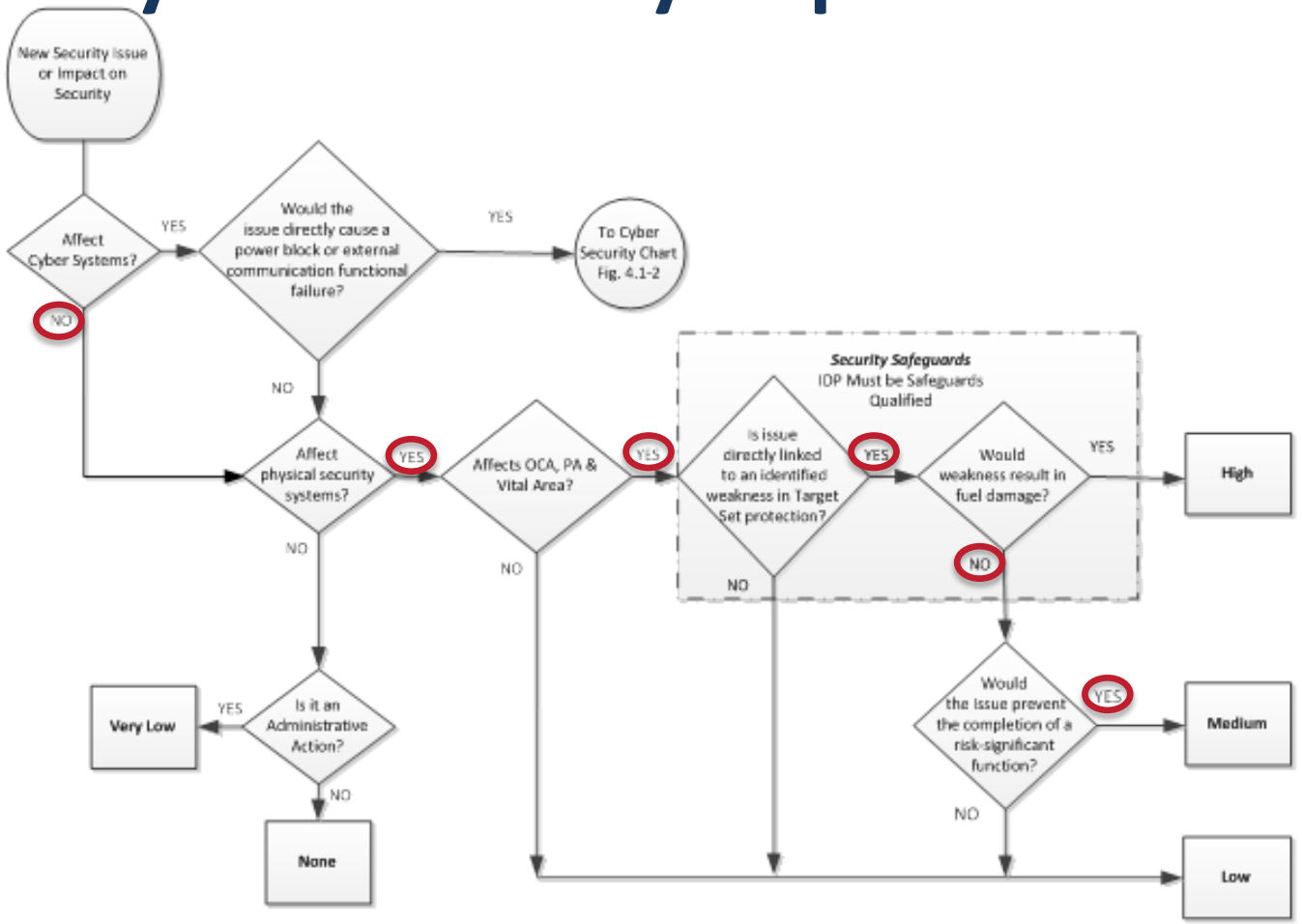
4. ☐ YES ☒ NO **Result in more than a minimal improvement in the capability of a fission product barrier?**

5. ☐ YES ☒ NO **Result in more than a minimal improvement in defense-in-depth capability or improvement in safety margin?**

If ALL the responses are NO, issue or activity screens to MINIMAL IMPACT and Nuclear Safety Importance is Very Low.

If ANY response is YES, continue on to Step 3.

Security #4 – Security Importance – Step 1

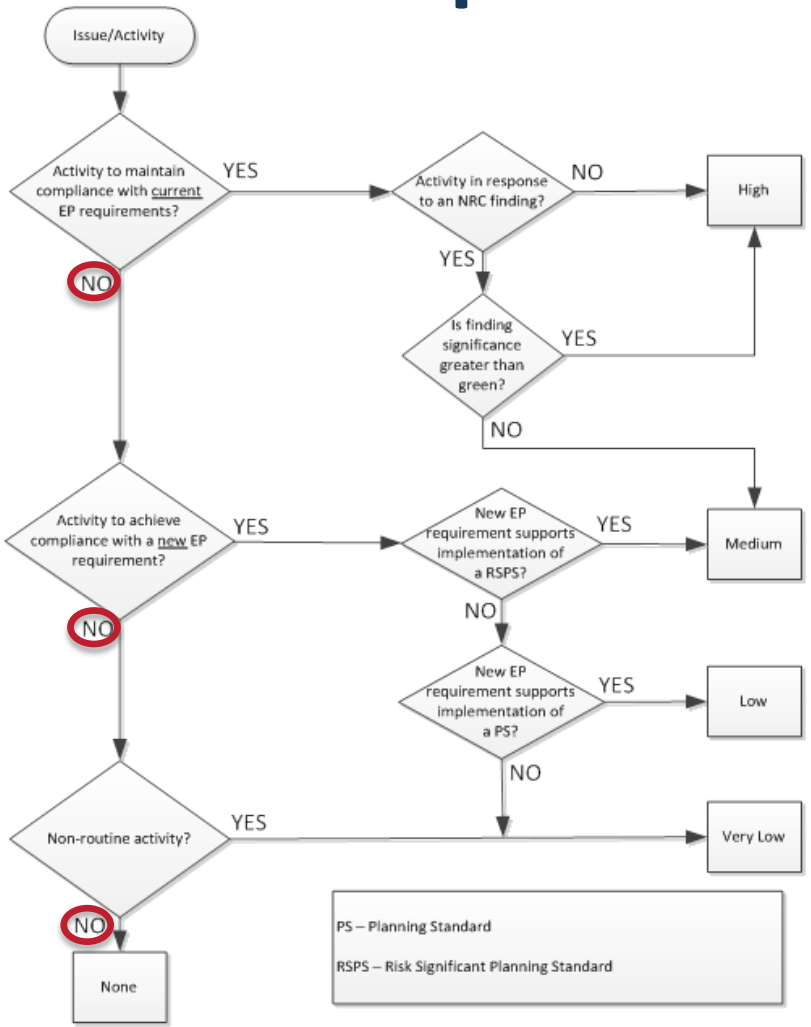


NOTE: As used in this document the term issue may be a cyber-security intrusion, a potential cyber-security intrusion, or a security action or potential action

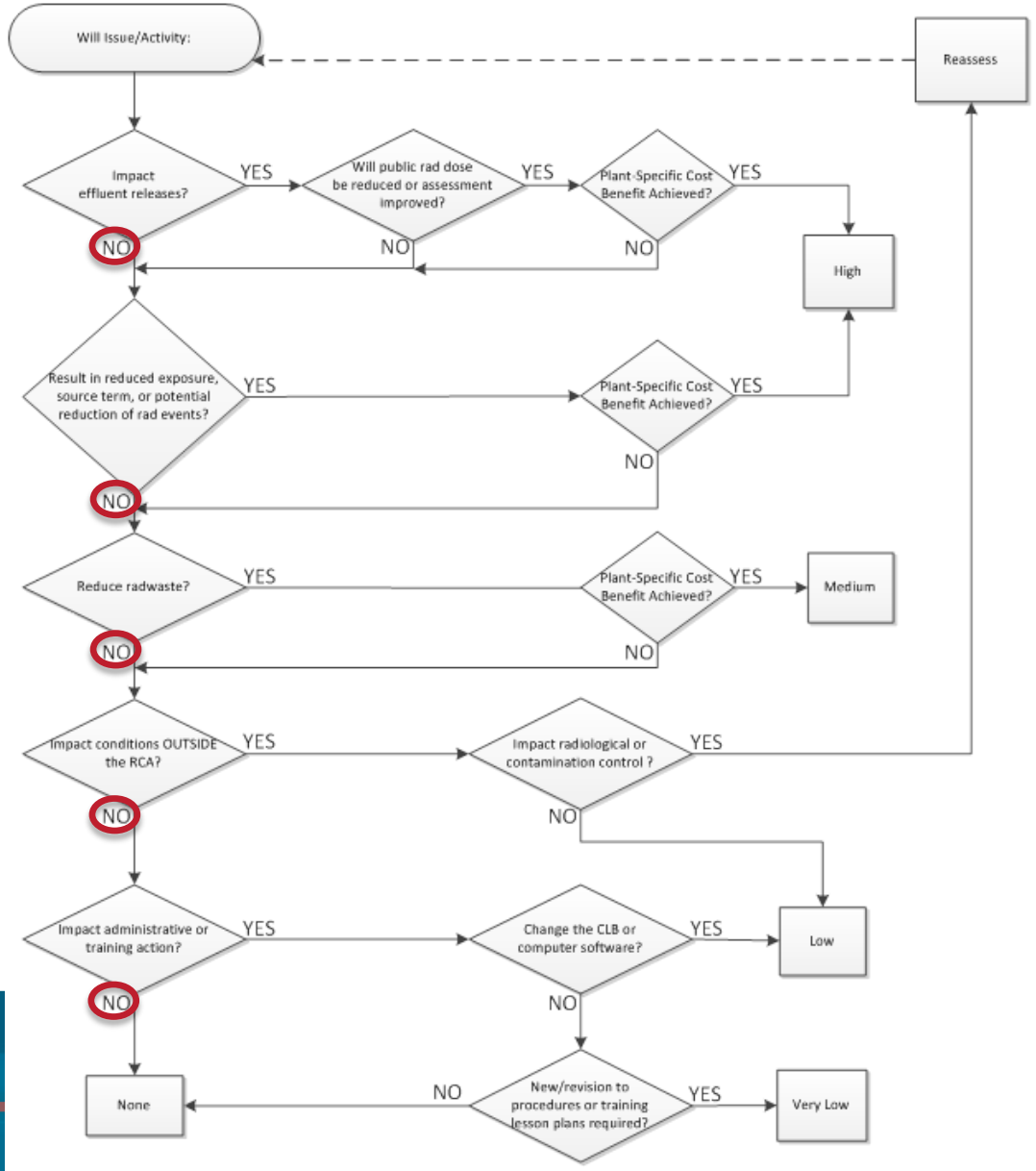
Security #4 – Security Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

Security #4 – EP Importance – Step 1



Security #4 – RP Importance – Step 1



Security #4 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO Is there a significant risk of SSC failure?

2. ☐ YES ☒ NO Is there a significant replacement lead time?

3. ☐ YES ☒ NO Is there an obsolescence issue?

4. ☐ YES ☒ NO Is there an impact on plant reliability?

5. ☐ YES ☒ NO Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

Security #4 – Other Considerations

- Security burden: compensatory measures in place

Security #4 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
Inoperable HELB/MELB barrier	Very Low	Medium	None	None	None	

Cyber Security Exercise #1

- The NRC intends to issue new requirements for reporting cyber security events (10 CFR 73.71 and 10 CFR 73.54). The rule may be issued in early 2015 with 180 day implementation. The changes would be implemented through the NRC approved Cyber Security Plan (CSP) and through site-specific implementing procedures. Licensees are currently implementing their NRC approved CSPs with a full implementation date beyond 2015 – and hence beyond the implementation requirement for the new reporting rule. The cyber security program implements protective measures for digital components in the facility. The reporting of events is administrative in nature.

Cyber #1 – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**

2. ☐ YES ☒ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**

3. ☐ YES ☒ NO **Result in an impact on the consequences of a risk significant accident sequence?**

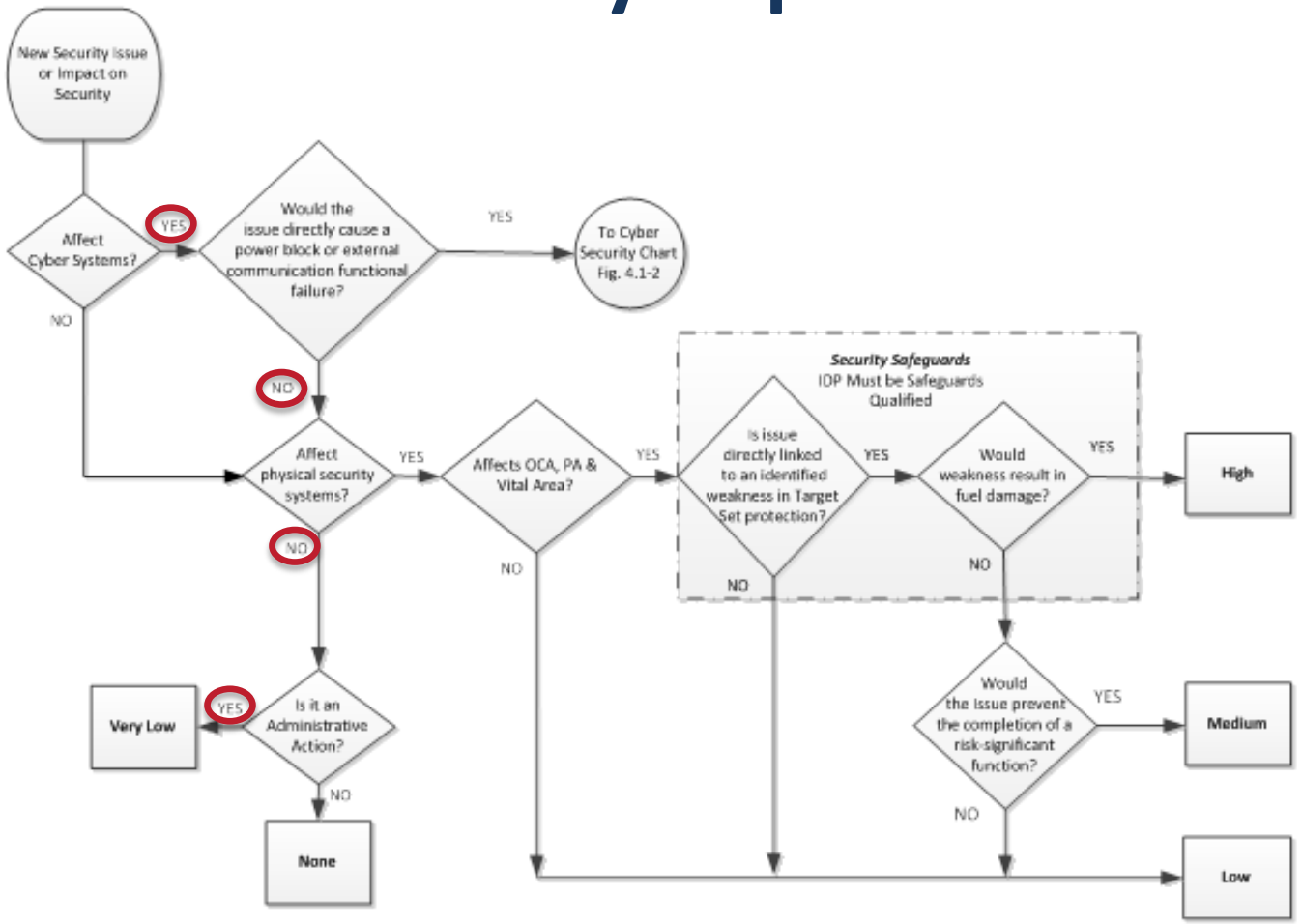
4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**

5. ☐ YES ☒ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

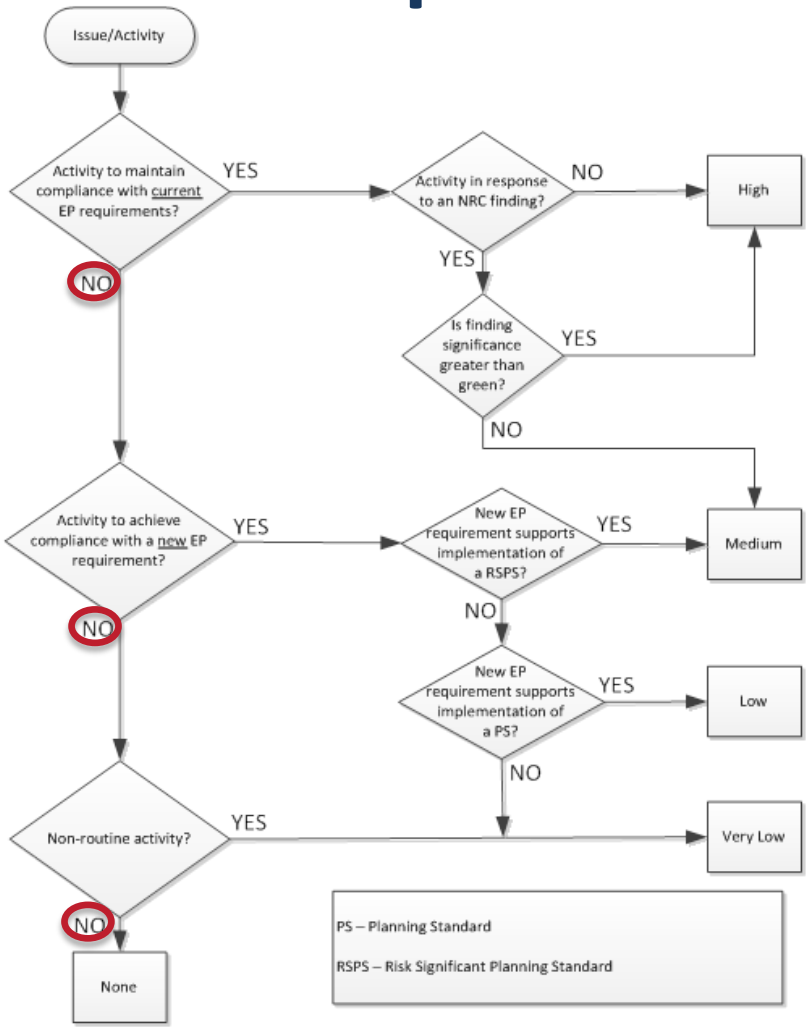
If ANY response is YES, continue on to Step 2.

Cyber #1 – Security Importance – Step 1

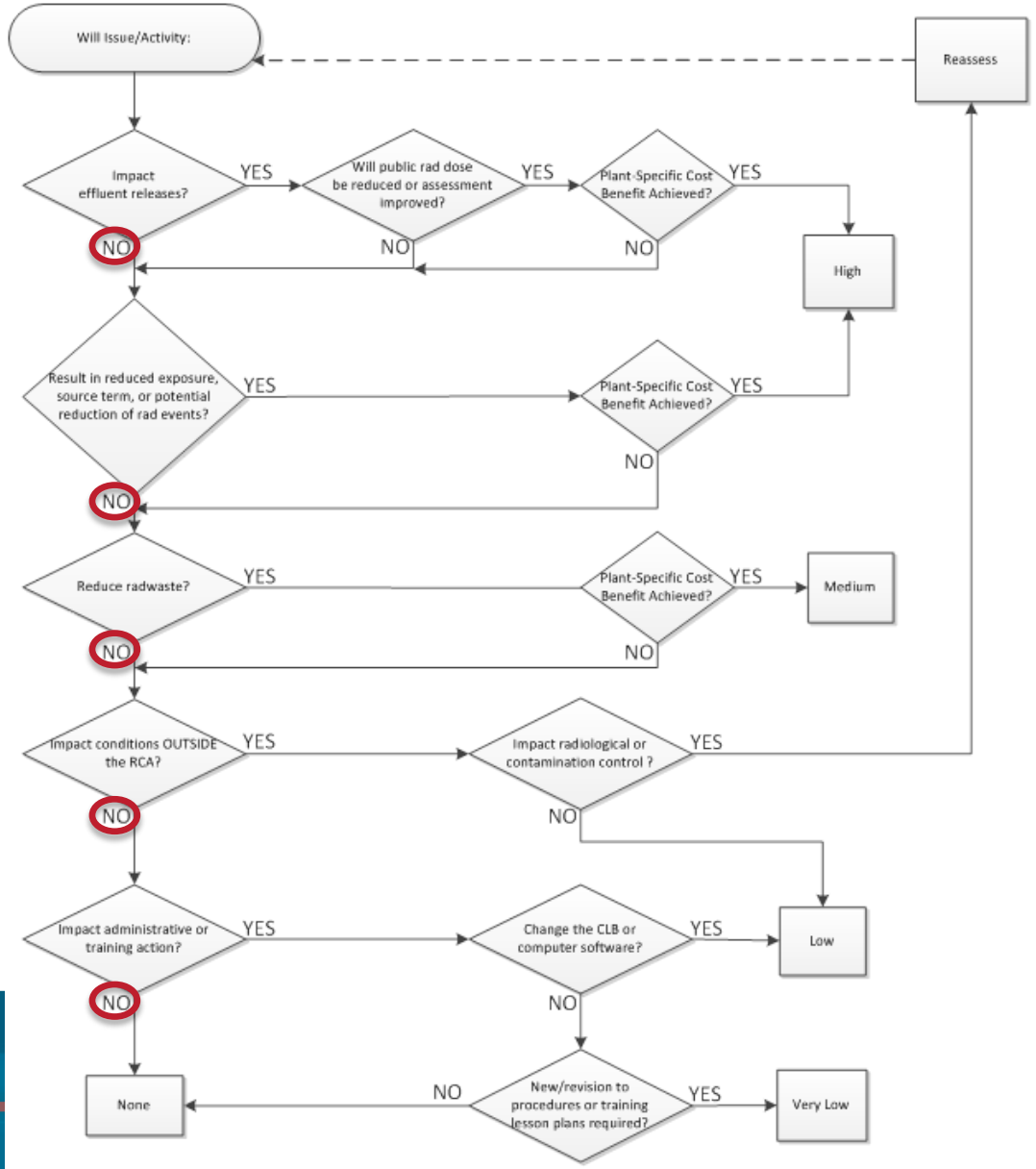


NOTE: As used in this document the term issue may be a cyber-security intrusion, a potential cyber-security intrusion, or a security action or potential action

Cyber #1 – EP Importance – Step 1



Cyber #1 – RP Importance – Step 1



Cyber #1 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO Is there a significant risk of SSC failure?

2. ☐ YES ☒ NO Is there a significant replacement lead time?

3. ☐ YES ☒ NO Is there an obsolescence issue?

4. ☐ YES ☒ NO Is there an impact on plant reliability?

5. ☐ YES ☒ NO Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

Cyber #1 – Other Considerations

- Potential diversion of licensee resources from implementation of CSP

Cyber #1 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
New Cyber Security Event Reporting	None	Very Low	None	None	None	

Cyber Security Exercise #2

- The NRC staff formed a working group to determine if the potential threat to ISFSIs' systems warrants protection from cyber attack. The staff is conducting an ISFSI cyber security assessment focusing on vulnerability and consequence analysis for each of the three types of ISFSIs: within an operating reactor protected area (PA), co-located with the operating reactor outside the reactor PA, and not co-located with an operating reactor (i.e., standalone/ decommissioned).
- This effort could result in new cyber security requirements applicable to ISFSIs. Fuel stored at ISFSI facilities is passively cooled, and there are no digital components relied on for safety of the casks.

Cyber #2 – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☐ YES ☒ NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**

2. ☐ YES ☒ NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**

3. ☐ YES ☒ NO **Result in an impact on the consequences of a risk significant accident sequence?**

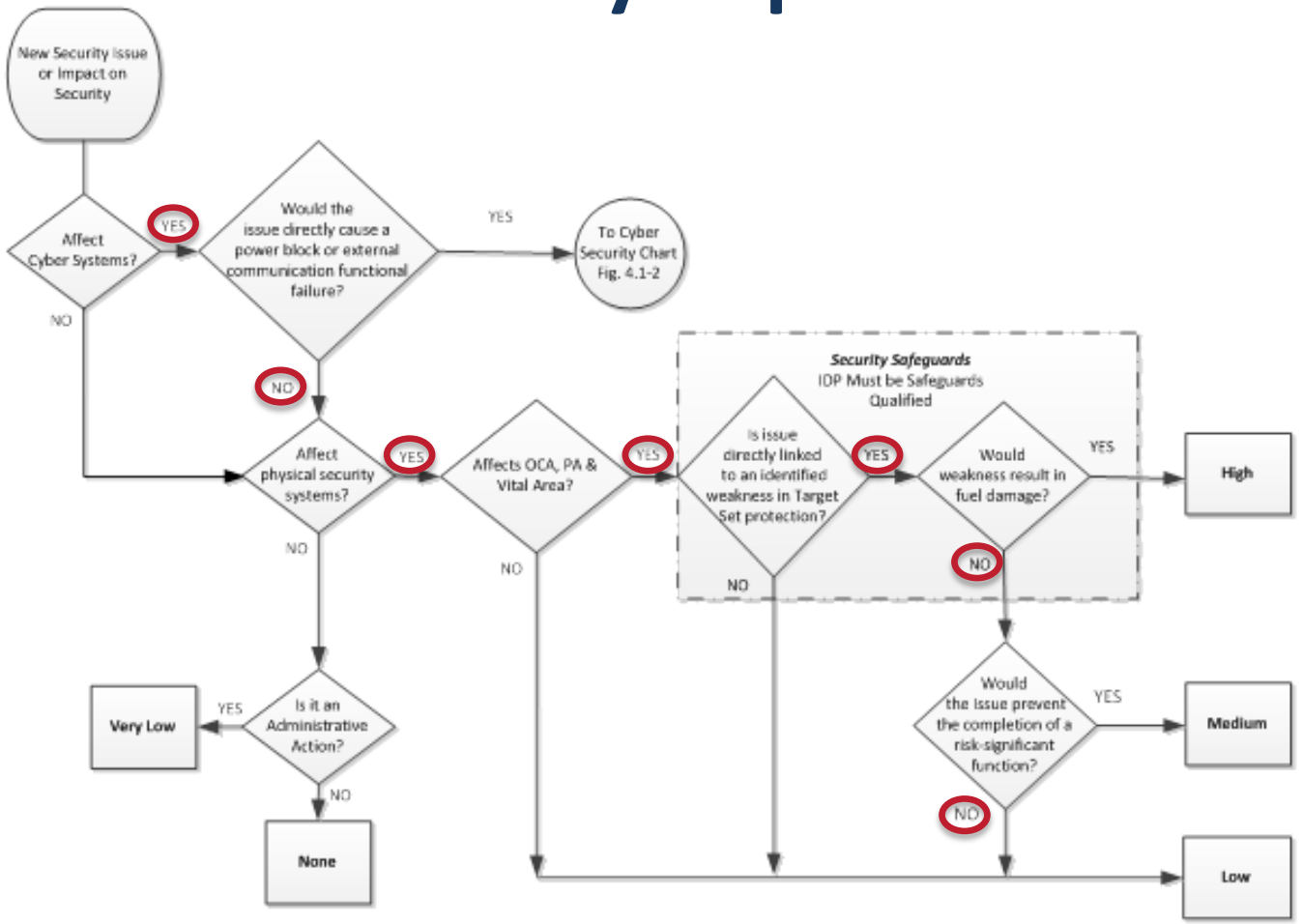
4. ☐ YES ☒ NO **Result in an impact on the capability of a fission product barrier?**

5. ☐ YES ☒ NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

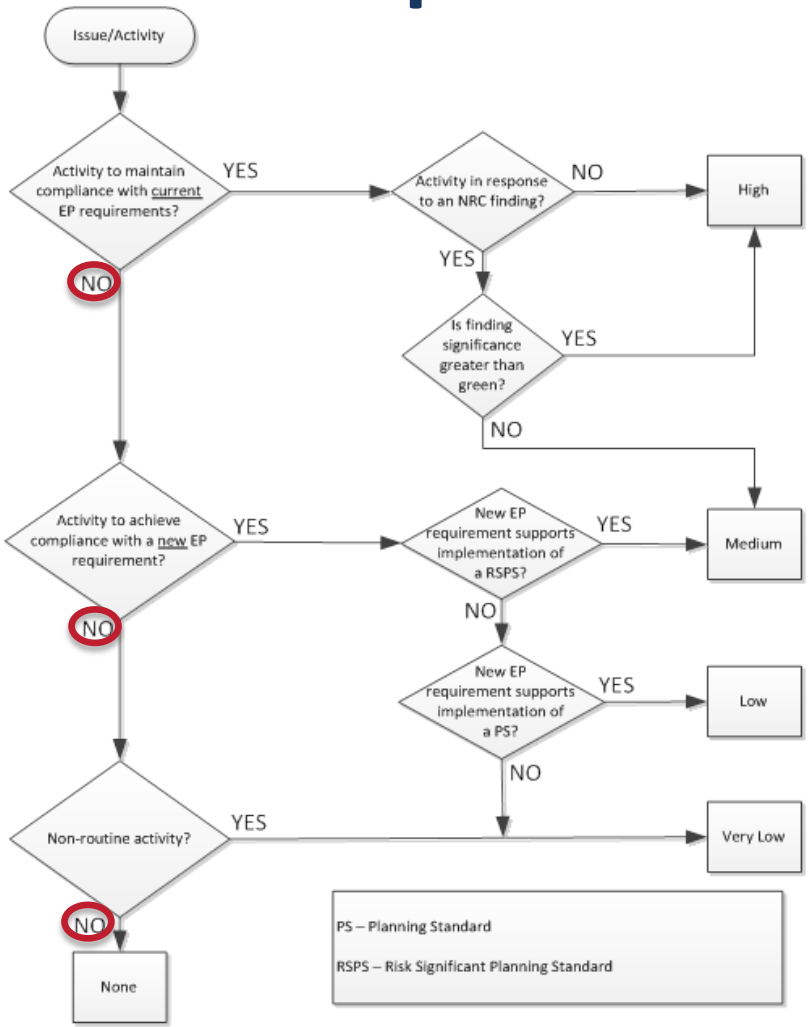
If ANY response is YES, continue on to Step 2.

Cyber #2 – Security Importance – Step 1

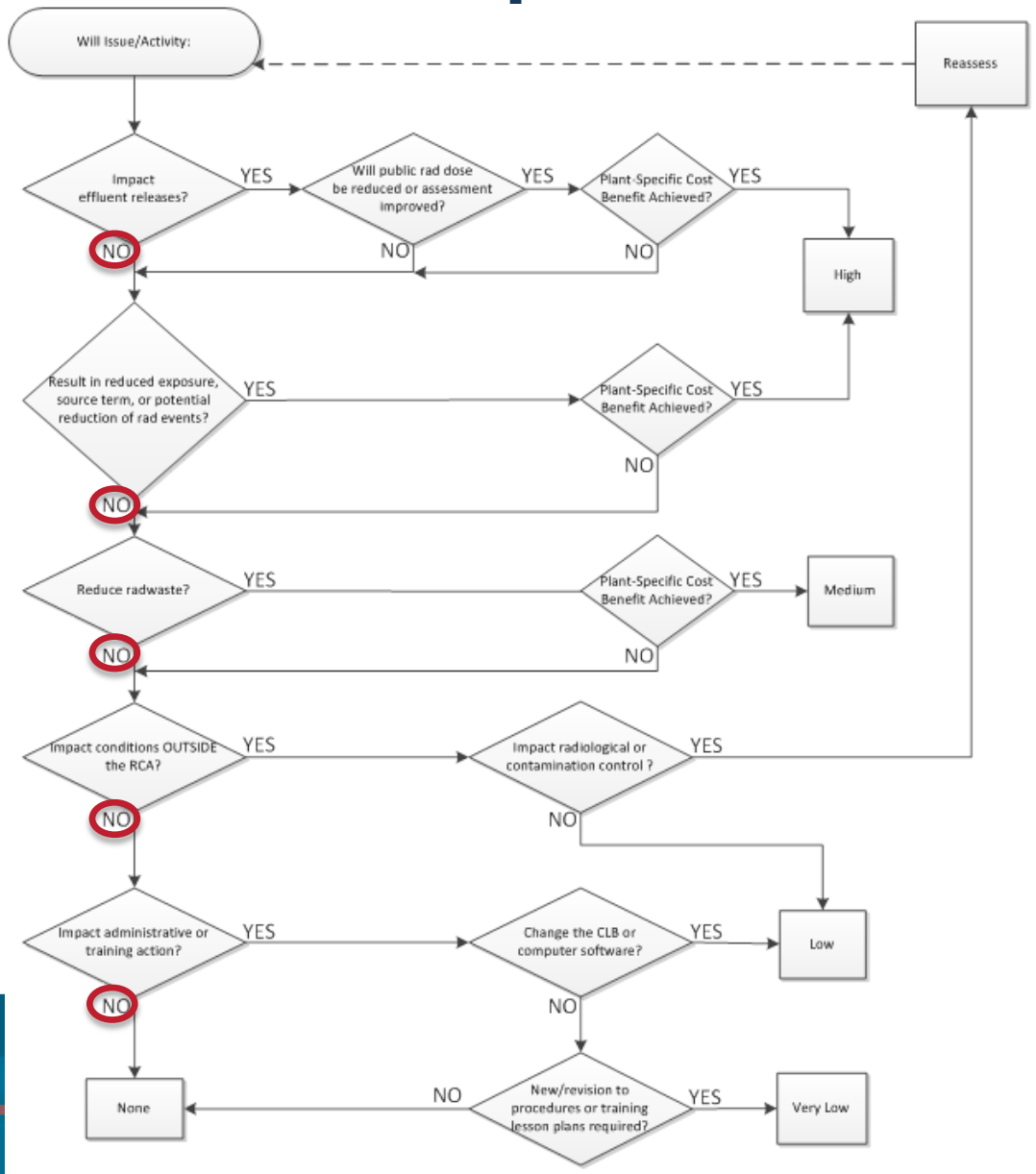


NOTE: As used in this document the term issue may be a cyber-security intrusion, a potential cyber-security intrusion, or a security action or potential action

Cyber #2 – EP Importance – Step 1



Cyber #2 – RP Importance – Step 1



Cyber #2 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO Is there a significant risk of SSC failure?

2. ☐ YES ☒ NO Is there a significant replacement lead time?

3. ☐ YES ☒ NO Is there an obsolescence issue?

4. ☐ YES ☒ NO Is there an impact on plant reliability?

5. ☐ YES ☒ NO Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

Cyber #2 – Other Considerations

Cyber #2 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
Cyber Security Requirements for ISFSI	None	Low	None	None	None	

Cyber Security Exercise #3

- Licensees implement cyber security requirements through an NRC approved CSP and a CSP Implementation Schedule.

- Milestone 6 of the Implementation Schedule commits licensees to identify, document, and implement cyber security controls for the protection of Digital Assets that, if compromised by cyber attack, could adversely impact the design function of physical security target set equipment. The site physical protection program provides high assurance that these elements are protected from physical harm by an adversary. The cyber security program will enhance the defense-in-depth nature of the protection of Digital Assets associated with target sets. Implementing Cyber Security Plan security controls to target set Digital Assets provides a high degree of protection against cyber related attacks that could lead to radiological sabotage.

Cyber #3 – Safety Importance – Step 1

Does the proposed activity or issue:

1. ☒ YES ☐ NO Result in an impact on the frequency of occurrence of a risk significant accident initiator?
2. ☒ YES ☐ NO Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?
3. ☒ YES ☐ NO Result in an impact on the consequences of a risk significant accident sequence?
4. ☐ YES ☒ NO Result in an impact on the capability of a fission product barrier?
5. ☒ YES ☐ NO Result in an impact on defense-in-depth capability or impact in safety margin?

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

If ANY response is YES, continue on to Step 2.

Cyber #3 – Safety Importance – Step 2

Does the proposed activity or issue:

1. ☒ YES ☐ NO **Result in more than a minimal decrease in frequency of occurrence of a risk significant accident initiator?**

2. ☒ YES ☐ NO **Result in more than a minimal improvement in the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**

3. ☒ YES ☐ NO **Result in more than a minimal decrease in the consequences of a risk significant accident sequence?**

4. ☐ YES ☒ NO **Result in more than a minimal improvement in the capability of a fission product barrier?**

5. ☒ YES ☐ NO **Result in more than a minimal improvement in defense-in-depth capability or improvement in safety margin?**

If ALL the responses are NO, issue or activity screens to MINIMAL IMPACT and Nuclear Safety Importance is Very Low.

If ANY response is YES, continue on to Step 3.

Cyber #3 – Safety Importance – Step 3

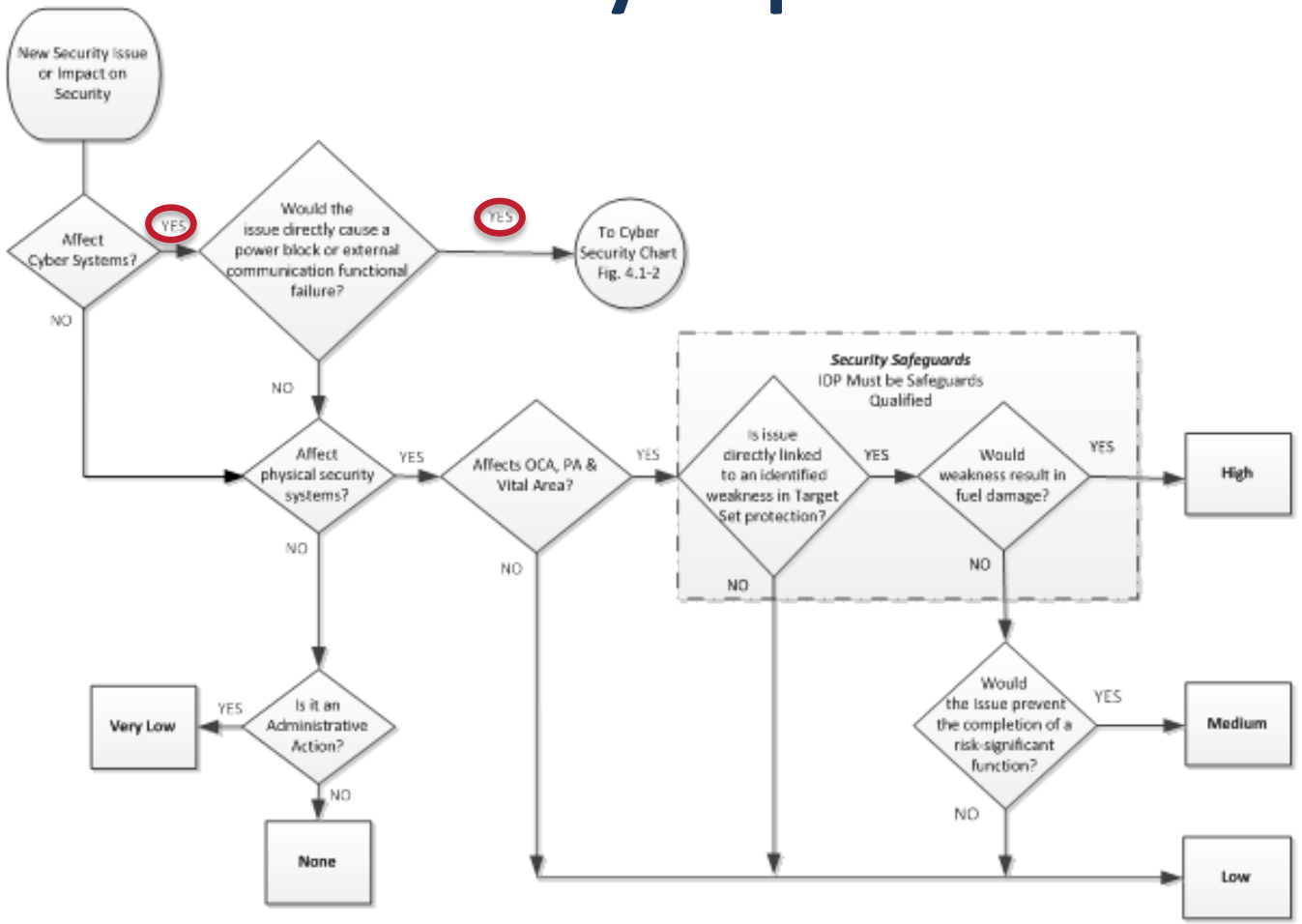
- There have been no successful cyber attacks causing a nuclear power plant accident initiator. Using 3 years as a representative time interval for the threat level, 100 nuclear plants, and a typical PRA assumption that the frequency can be approximated by assigning 0.5 events to the interval, yields an estimated frequency of cyber attacks causing a transient initiator of 1.7E-3. Multiplying by a plant specific conditional core damage probability for transient initiators in the 1E-6 (uncomplicated scram) to 1E-4 (complicated scram) range provides a cyber security CDF of ~1E-9 to 1E-7 /yr.
- The existing cyber security controls have been effective for the current threat level and increasing them is not expected to result in a more than minimal impact on risk reduction.

Cyber #3 – Safety Importance – Step 3

Table 3-1 Matrix by Current Risk and Potential Impact					
UB is upper bound of the risk range; Mid is "mid-range" (0.3 times UB); LB is factor of 10 lower than UB[1]					
Current Risk associated with Issue	**Potential Impact of Action Resolving Issue (Reduction in Risk)**				
	None	Very Small/Minimal	Small	Medium	High
	0%	0 to 25%	25 to 50%	50% to 90%	>90%
	Importance				
Green (VL) LB	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) Mid	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) UB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) LB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) Mid	Very Low	Very Low	Low	Low	Low
White (L) UB	Very Low	Low	Low	Low	Low
Yellow (M) LB	Very Low	Low	Low	Low	Low
Yellow (M) Mid	Very Low	Low	Medium	Medium	Medium
Yellow (M) UB	Very Low	Medium	Medium	Medium	Medium
Red (H) LB		Medium	Medium	Medium	Medium
Red (H) Mid		High	High	High	High
Red (H) UB		High	High	High	High

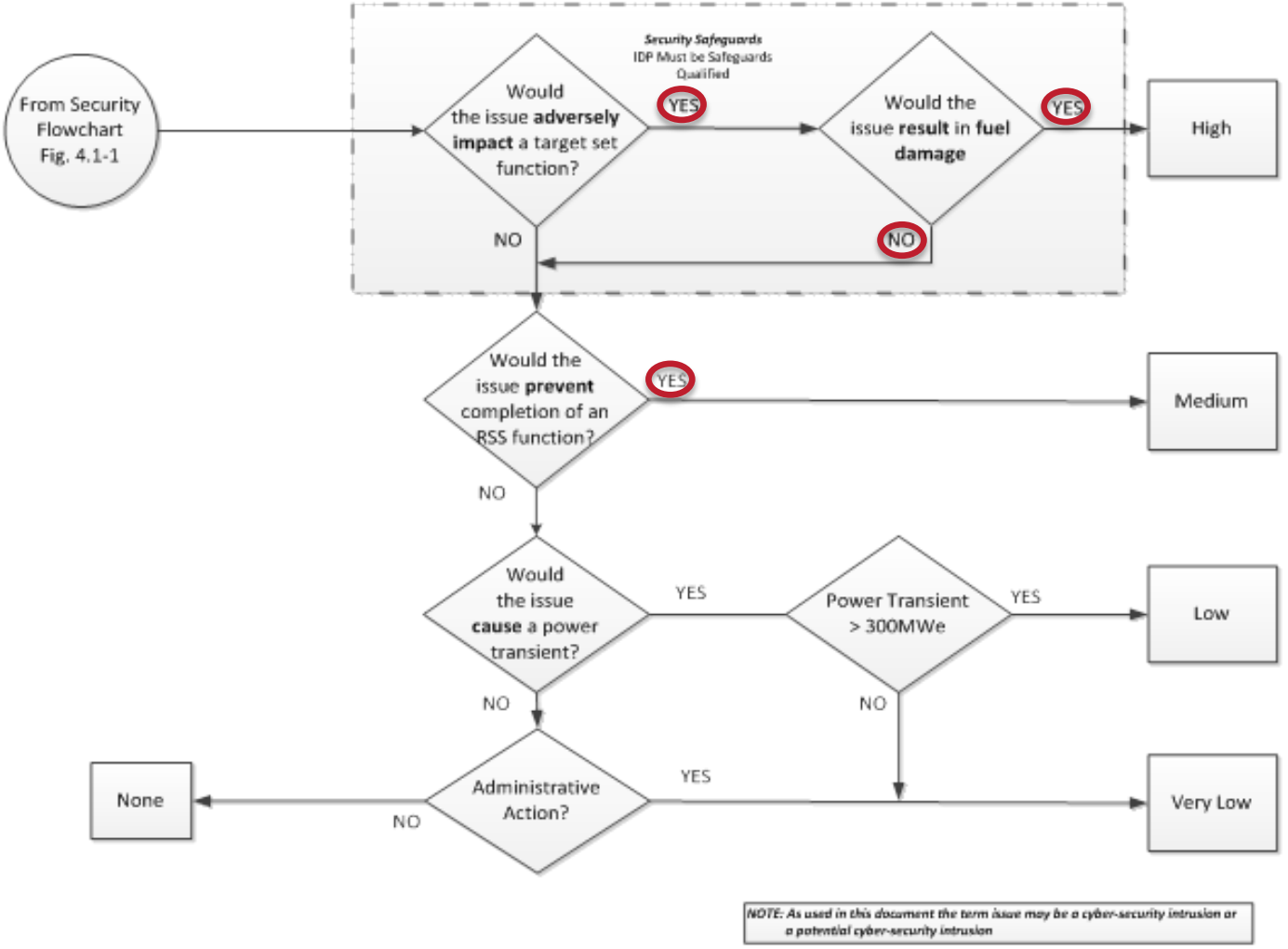
[1] The thresholds in the left column are consistent with the SDP and are (in units of per yr), for CDF: Green/White = 10^{-6}, White/Yellow = 10^{-5}, Yellow/Red = 10^{-4}; and for LERF: Green/White = 10^{-7}, White/Yellow = 10^{-6}, Yellow/Red = 10^{-5}.

Cyber #3 – Security Importance – Step 1



NOTE: As used in this document the term issue may be a cyber-security intrusion, a potential cyber-security intrusion, or a security action or potential action

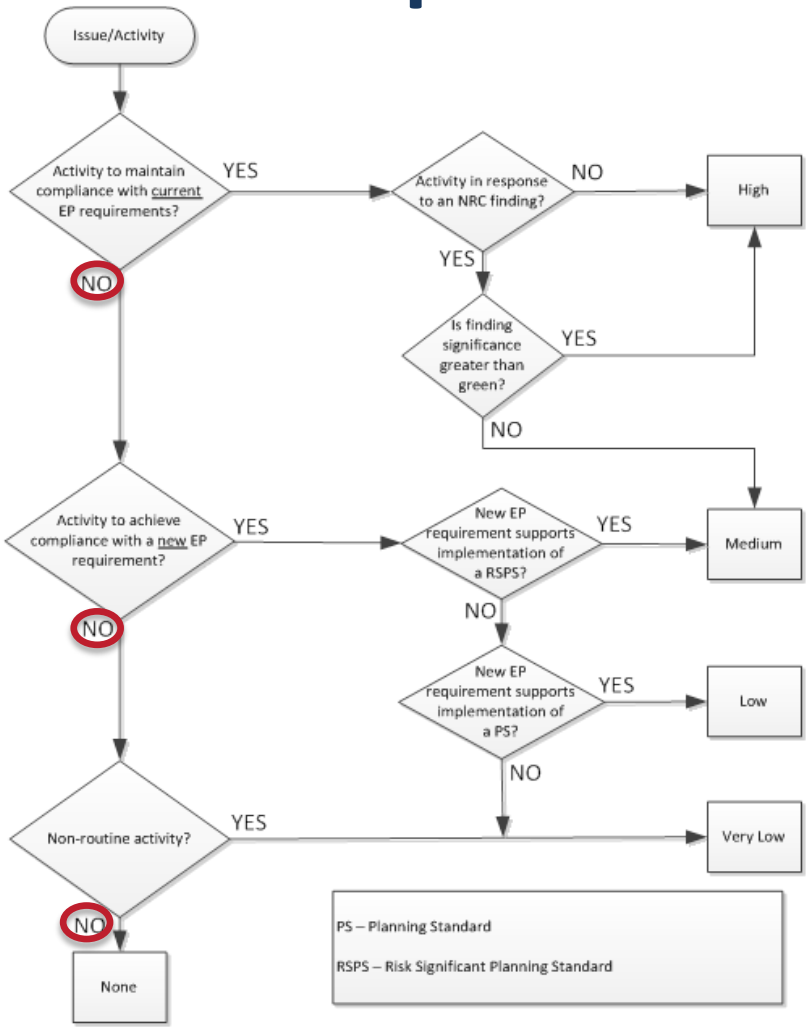
Cyber #3 – Security Importance – Step 1 cont.



Cyber #3 – Security Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

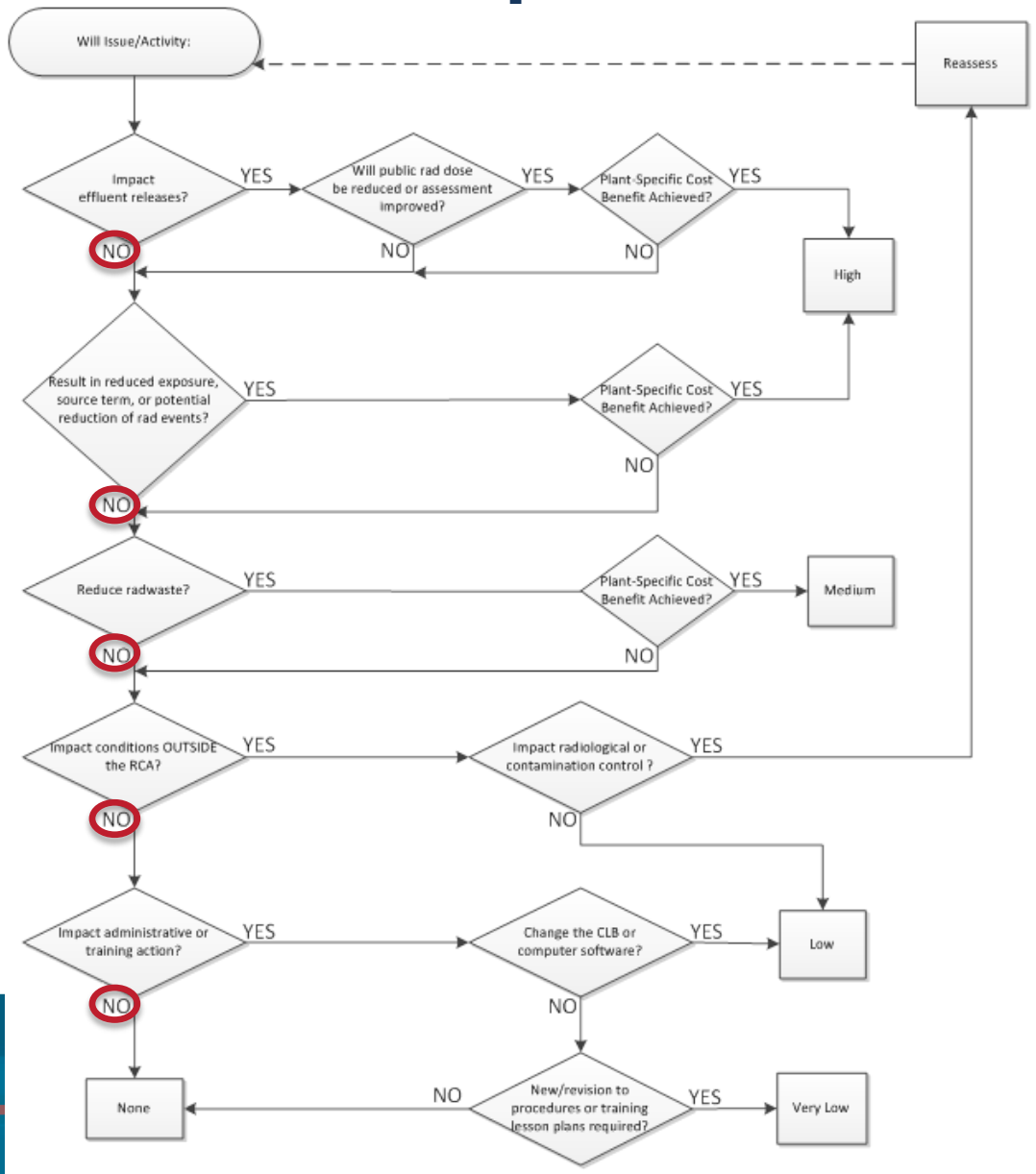
Cyber #3 – EP Importance – Step 1



Cyber #3 – EP Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	**Potential Impact of Action Resolving Issue (Effectiveness)**		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

Cyber #3 – RP Importance – Step 1



Cyber #3 – Reliability Importance – Step 1

For the proposed activity or issue:

1. ☐ YES ☒ NO — **Is there a significant risk of SSC failure?**
2. ☐ YES ☒ NO — **Is there a significant replacement lead time?**
3. ☐ YES ☒ NO — **Is there an obsolescence issue?**
4. ☐ YES ☒ NO — **Is there an impact on plant reliability?**
5. ☐ YES ☒ NO — **Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

Cyber #3 – Other Considerations

Cyber #3 Summary

Issue	Safety	Security	EP	RP	Reliability	Priority
CSP Implementation Schedule Milestone 6 (Cyber Protection of Target Sets)	Very Low	Medium	None	None	None	

Aggregation to Determine Priority

- After the plant IDP has assigned each issue a level of importance in each of the five categories, criteria are used to assign the issue a priority level from 1 to 5.
- Prioritization and scheduling will be periodically updated based on plant-specific planning, e.g., annually in conjunction with updates to the business plan.

Criteria to assign priority level

- Priority 1
  - Issue defined by NRC as adequate protection, OR
  - High for Safety, OR
  - Two or more Highs for any of the four other categories (Security, EP, RP, Reliability)
- Priority 2
  - Medium for Safety, OR
  - One High for any of the four other categories, OR
  - Two or more Mediums for any of the four other categories

Criteria to assign priority level (cont.)

- Priority 3
  - Low for Safety, OR
  - One Medium for any of the four other categories, OR
  - Two or more Lows for any of the four other categories
- Priority 4
  - Very Low for safety, OR
  - One Low for any of the four other categories
- Priority 5
  - Does not meet any of the criteria for Priorities 1 through 4

Priority of Tabletop Exercises

Issue	Safety	Security	EP	RP	Reliability	Priority
EP #1: Rebuild EOF	Medium	None	High	None	None	2
EP #2: New primary siren control	Low/ Medium	None	High	None	None	2
EP #3: 10CFR50, App E new protective actions	Very Low	None	Low	None	None	4
EP #4 Replace SMS	None	None	High	None	Medium	2

Priority of Tabletop Exercises

Issue	Safety	Security	EP	RP	Reliability	Priority
RP #1: Degraded Radiation Monitoring capability	Very Low	None	High	Low	None	2
RP #2a: Degraded Radiological Conditions	Very Low	None	None	High	None	2
RP #2b: Degraded Radiological Conditions	Very Low	None	None	High	None	2

Priority of Tabletop Exercises

Issue	Safety	Security	EP	RP	Reliability	Priority
RP #3: 10CFR50, App I revise effluent management syst. software	None	None	None	Low	None	4
RP #4: 10CFR20 revise dose limit to lens of the eye	None	None	None	Low	None	4
Sec. #1: Toxic mold in BRE	None	Low	None	None	None	4
Sec. #2: Damaged pop-up barrier	Very Low	Low	None	None	None	4

Priority of Tabletop Exercises

Issue	Safety	Security	EP	RP	Reliability	Priority
Sec. #3: Weapons require modification	Very Low	Low	None	None	Medium	3
Sec. #4: Inop. HELB/MELB barrier	Very Low	Medium	None	None	None	3
Cyber #1: New Cyber Security Event Reporting	None	Very Low	None	None	None	5
Cyber #2: Cyber Security Requirements for ISFSI	None	Low	None	None	None	4

Priority of Tabletop Exercises

Issue	Safety	Security	EP	RP	Reliability	Priority
Cyber #3: CSP Implementation Schedule Milestone 6 (Cyber Protection of Target Sets)	Very Low	Medium	None	None	None	3

Priority of Pilot Issues To-Date

Plant	Priority	# Issues
Robinson	1	0
	2	2
	3	5
	4	6
	5	9
Davis-Besse	1	1
	2	2
	3	5
	4	10
	5	0

Priority of Pilot Issues To-Date

Plant	Priority	# Issues
V.C. Summer	1	0
	2	2
	3	1
	4	4
	5	0

Conclusion

- Recognize that (nuclear) Safety Characterization does not capture public or personnel safety
- Security, EP, RP & Reliability Categories intended to fill this gap
- Aggregation allows prioritization to appropriately reflect plant-specific risk profile