



Office of Environmental Management

Technical Risk Rating for Environmental Management Projects

Criteria and Methodology

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EM *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov

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Development of Technical Risk Rating for EM Projects

The EM project Technical Risk Rating is used to enhance EM management confidence and assurance that risk management is being implemented on projects on a consistent basis and technical risk is being identified, managed, and communicated to management. The Technical Risk Rating and the criteria used to determine the rating provide a mechanism to foster open, meaningful communication between the Federal Project Directors and EM management concerning project technical risks. Open communication will help EM management gain confidence in project risk management efforts. The EM intent is to provide indicators that will prompt discussions focusing on the issues and key aspects related to the risks. It is not envisioned to be a “scoring” system for comparing one project to other projects. The objective is to bring pressing risk issues to the forefront, keeping EM management informed and engaged such that they fully understand risk impact.

Use of the Technical Risk Rating and criteria will provide the Federal Project Directors the opportunity to openly discuss what he/she considers to be the most significant risk concerns in a “win-win” situation for themselves and EM management. The criteria used to determine the overall rating are selected to allow separate candid judgments on technical risk severity and handling that will enable presentation of a more accurate status on technical risk to the project.

These ratings address only project level technical risk and do not include programmatic risks. Technical risk is defined as any risk having an engineering or technology issue, basis, or impact, regardless of any individual risk classifications (e.g., regulatory) that may be in use for management purposes. The Technical Risk Ratings will be included in the Quarterly Project Review (QPR) packages and will supplement critical decision reviews. Ratings will be determined by the Federal Project Director. Note: Use of the Technical Risk Rating during the QPR is one method for communicating risk information, however it should not be the sole method used to keep EM management apprised of project risk.

Four criteria have been selected to comprise the Technical Risk Rating:

1. Technology Maturity — A measure of maturity/availability/existence of the technology needed to address the consequences of the risk.
2. Risk Urgency — A measure of the relative time in the project schedule when risk consequences are expected to occur and intervention is needed.
3. Handling Difficulty — A measure of the complexity and/or difficulty in developing and implementing a suitable solution to technical issues.
4. Resolution Path — A measure of the progress made towards achieving expected results and reducing risk during implementation of the handling strategy.

Ratings for each of the criteria are indicated using a red-yellow-green “stoplight” type symbol. The color coding is intended to provide visual representation of the level of concern. In this context, red indicates an area that, in the judgment of the FPD, warrants additional attention by either EM leadership and/or the Project Team.

Sources of information for development of the Technical Risk Rating are: the Risk Management Plans, any available Technical Readiness Assessments, External Technical Reviews, or Independent Project Reviews, and inputs from periodic project reviews. The FPD should base his/her determinations on evaluation of the High and Moderate technical risks in the project. The intent is to elevate pertinent issues and concerns in any of the rating categories to the attention of management. The bases for the ratings selected should be documented.



Technical Maturity

Technical Maturity is a measure of maturity/availability/existence of the technology needed to address the consequences of the risk. This criterion answers the question: “Are the needed technologies ready for deployment?” The Technical Maturity rating is based on the lowest or least mature element of the project. Technical Maturity is determined from either a formal Technical Readiness Assessment (TRA) or based on the FPD’s judgment per the descriptions in the table below.

Technical Maturity Description ¹	Rating
Basic process technology principles observed and reported; or equipment and process concept formulated; or TRL = 1, 2.	
Equipment and process analysis and proof of concept demonstrated in a simulated environment; or laboratory testing of similar equipment systems completed in a simulated environment; or TRL = 3, 4.	
Bench scale equipment/process system demonstrated in a relevant environment; or TRL = 5.	
Prototypical equipment/process systems demonstrated in a relevant environment; or actual equipment systems/process system successfully operated in the expected operational environment; or TRL = 6, 7.	
Actual equipment/process successfully operated in limited operational and/or operational environments; or TRL = 8, 9.	

¹ Technical Maturity descriptions are based on the March 2008 final EM TRA / TMP Guide

Risk Urgency

Risk Urgency is a measure of the relative time in the project schedule when technical risk consequences are expected to occur and intervention is needed. This criterion answers the question: “Are the impacts close, does the project have time to work the issues, is the critical path delayed?” The impacts to be considered are the consequences of risk(s) (e.g., critical path schedule delays, cost increases, missed stakeholder commitments, etc.) taken from the risk assessments. This could be based on a single risk or several risks. The intent is to provide the opportunity to bring management attention to any potential impacts due to technical risks occurring in the near term. The Risk Urgency is determined from the following table.

Risk Urgency Description	Rating
Performance and/or critical path impacts expected to occur within 6 months; urgent attention and increased focus required to address impact, need to work handling resolution actions aggressively.	
Performance and/or critical path impacts expected to occur within 6 to 9 months; response planning may be needed	
Performance and/or critical path impacts expected to occur within 9 to 12 months.	
Performance and/or critical path impacts expected to occur within 12 to 18 month planning window.	
Performance and/or critical path impacts expected to occur after 18 months; flexibility in implementing handling actions.	

Handling Difficulty

Handling Difficulty is a measure of the complexity and/or difficulty in developing and implementing a suitable solution to technical issues. This criterion answers the question: “How difficult is it going to be to define and perform actions that will mitigate the risk(s)?” This judgment could be based on a single risk or several risks. The intent is to inform management of difficult technical areas that present a significant challenge.

If a technical peer review has been conducted, the results of the review should be considered as input to the confidence in the plan.

Handling Difficulty is determined from the following table.

Handling Difficulty Description	Rating
Technical requirements incomplete; or handling strategy not defined; or handling strategy considered very complex and/or extremely challenging; or peer review rejected handling strategy.	
Some uncertainty with technical requirements; or handling strategy incomplete; or handling strategy considered complex and/or challenging; or uncertainty in completeness of handling strategy; or peer review identified problems with handling strategy.	
Technical requirements known, changes in interpretation possible; or handling strategy defined, changes possible or with some complexity/challenges; or some doubt in effectiveness of handling strategy; or peer review not conducted or no results yet.	
Technical requirements known, interpretation clear; or handling strategy defined, minimal challenges; or minor changes possible; or confidence in the expected results; or peer review supports most of handling strategy.	
Technical requirements known, interpretation clear; or handling strategy clearly defined and accepted, straightforward approach; or high confidence in the expected results; or peer review supports strategy.	



Resolution Path

Resolution Path is a measure of progress made towards achieving expected results and reducing risk during implementation of the handling strategy². This criterion answers the question: “Are the results from the risk handling actions mitigating the risk(s) as expected?” From a project perspective, the FPD determines whether handling strategies have been defined in a measurable way; whether strategies are on track for implementation; and whether the forecast reduction in risk is occurring as expected. Additionally the FPD determines whether additional knowledge gained in implementing the handling strategies shows risks at a higher risk level (greater likelihood and/or consequence) than originally conceived. This judgment could be based on a single risk or several risks. Resolution Path is determined using the following table.

Resolution Path Description	Rating
Results are contrary to expected outcomes; or negative impact on risk mitigation; or strategy not working, requires revision.	
Results are inconclusive, with doubt on effectiveness; or unknown impact on risk mitigation; or risk reduction may be in jeopardy.	
Handling strategy not started yet; or preliminary results as expected but inconclusive; or risk reduction is uncertain or somewhat less than expected; or handling strategy may need minor revision.	
Handling producing expected results; or results support risk reduction; or strategy is on track.	
Strategy has effectively reduced risk impact (confirmed by data or analysis).	

² “Handling Strategy” and “Mitigation” are used here to discuss plans or action necessary to avoid or minimize the impact of the risk as defined in DOE M 413.3-1.



Development of the Technical Risk Rating

The overall project Technical Risk Rating is determined by a qualitative assessment done by the Federal Project Director. The Federal Project Director bases this judgment on the individual criteria values and other input as appropriate. The final Rating is assigned based on the following table.

Technical Risk Rating	Management Impact
	Project technical risk(s) require heightened attention and may require Acquisition Executive decisions on direction or resources.
	Project technical risk(s) require additional focus and may require Acquisition Executive decisions on direction or resources.
	Project technical risk(s) have concerns in several areas and may require additional focus by the Integrated Project Team.
	Project technical risk(s) are manageable. Minor concern in selected areas, but additional focus not required.
	Project technical risk(s) are manageable as planned.

The Technical Risk Rating Evaluation Form shown in Attachment A is to be used to record the judgments and basis information for the criteria ratings and the Technical Risk Rating for the project. The form contains the criteria descriptions for ease of use and provides space to document information relative to each criterion and the overall evaluation.

Quarterly Project Review Quad Charts

The Technical Risk Rating is reported on the second Quad Chart in the Quarterly Project Review (QPR). Programmatic risk is to be reported on the risk quadrant in the first Quad Chart. An example of the technical risk quadrant on the second QPR Quad Chart is shown in Attachment B.

The Technical Risk Rating is reported prominently at the top of the risk quadrant. The text area in the upper part of the quadrant is used to identify:

- The total number of High or Moderate technical risks for the project
- The key technical risks that are the basis for the Technical Risk Rating
- The consequences to the project as a result of those risks

The individual judgments for each of the four criteria are reported in the lower part of the risk quadrant. The judgments are to include:

- Stoplight ratings for each criterion.
- Information to help understand the judgments made for the criteria.
- The specific risk or risks from the key technical risks driving the judgment.
- Discussion points the FPD wants to convey to EM leadership, e.g., issues requiring attention, successes, opportunities, etc. (open to any risk topic to provide the information the FPD wants management to retain).

Rating stoplight symbols for the criteria and the Technical Risk Rating from the previous QPR are carried over to show the trend to the current reporting period. A back-up slide should also be prepared to provide additional detail on the key technical risks included in the Technical Risk Rating and/or additional project technical risks. The back-up slide provides additional information to management beyond the limitations of the Quad Chart.

Attachment C provides guidance that may be consulted when determining the judgments against the criteria and the overall Technical Risk Rating and for completing the QPR Quad Chart technical risk quadrant.

Attachments:

Attachments to this document include;

- A - Technical Risk Rating Evaluation Form:
Data template for collecting information for each criterion
- B - Quarterly Project Review (QPR) Quad Chart:
Template for information to be presented in the Quarterly Project Review
- C – Project Application Guidance:
Guidance for determining the Technical Risk Rating and completing the Quad Chart



Attachment A

Technical Risk Rating Evaluation Form



TECHNICAL RISK RATING EVALUATION

PROJECT: _____ PBS - _____ DATE: _____

ASSESSOR: _____ LOCATION: _____

TECHNICAL RISKS: TOTAL # _____ # OF MODERATE RISKS _____ # OF HIGH RISKS _____

PERSONS INTERVIEWED	DOCUMENTS REVIEWED
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Sources of information for development of the Technical Risk Rating are: the Risk Management Plans, any available Technical Readiness Assessments, External Technical Reviews, or Independent Project Reviews, and inputs from periodic project reviews.

The FPD should base his/her determinations on evaluation of the High and Moderate technical risks in the project. The intent is to elevate pertinent issues and concerns in any of the rating categories to the attention of management. The bases for the ratings selected should be documented.

Key Risks: _____

Technical Maturity

Technical Maturity is a measure of maturity/availability/existence of the technology needed to address the consequences of the risk. This criterion answers the question: "Are the needed technologies ready for deployment?" The Technical Maturity rating is based on the lowest or least mature element of the project. Technical Maturity is determined from either a formal Technical Readiness Assessment (TRA) or based on the FPD's judgment per the descriptions in the table below. Technical Maturity descriptions are based on the March 2008 final EM TRA/TMP Guide.

Basis for rating: _____

		RATING
	Basic process technology principles observed and reported; or equipment and process concept formulated; or TRL = 1, 2.	
	Equipment and process analysis and proof of concept demonstrated in a simulated environment; or laboratory testing of similar equipment systems completed in a simulated environment; or TRL = 3, 4.	
	Bench scale equipment/process system demonstrated in a relevant environment; or TRL = 5.	
	Prototypical equipment/process systems demonstrated in a relevant environment; or actual equipment systems/process system successfully operated in the expected operational environment; or TRL = 6, 7.	
	Actual equipment/process successfully operated in limited operational and/or operational environments; or TRL = 8, 9.	



TECHNICAL RISK RATING EVALUATION - Page 2

PROJECT: _____ PBS - _____ DATE: _____

Risk Urgency

Risk Urgency is a measure of the relative time in the project schedule when technical risk consequences are expected to occur and intervention is needed. This criterion answers the question: "Are the impacts close, does the project have time to work the issues, is the critical path delayed?" The impacts to be considered are the consequences of risk(s) (e.g., critical path schedule delays, cost increases, missed stakeholder commitments, etc.) taken from the risk assessments. This could be based on a single risk or several risks. The intent is to provide the opportunity to bring management attention to any potential impacts due to technical risks occurring in the near term. The Risk Urgency is determined from the following table.

Basis for rating: _____

		RATING
	Performance and/or critical path impacts expected to occur within 6 months; urgent attention and increased focus required to address impact, need to working handling resolution actions aggressively.	
	Performance and/or critical path impacts expected to occur within 6 to 9 months; response planning may be needed	
	Performance and/or critical path impacts expected to occur within 9 to 12 months.	
	Performance and/or critical path impacts expected to occur within 12 to 18 month planning window.	
	Performance and/or critical path impacts expected to occur after 18 months; flexibility in implementing handling actions.	

Handling Difficulty

Handling Difficulty is a measure of the complexity and/or difficulty in developing and implementing a suitable solution to technical issues. This criterion answers the question: "How difficult is it going to be to define and perform actions that will mitigate the risk(s)?" This judgment could be based on a single risk or several risks. The intent is to inform management of difficult technical areas that present a significant challenge. If a technical peer review has been conducted, the results of the review should be considered as input to the confidence in the plan. Handling Difficulty is determined from the following table.

Basis for rating: _____

		RATING
	Technical requirements incomplete; or handling strategy not defined; or handling strategy considered very complex and/or extremely challenging; or peer review rejected handling strategy.	
	Some uncertainty with technical requirements; or handling strategy incomplete; or handling strategy considered complex and/or challenging; or uncertainty in completeness of handling strategy; or peer review identified problems with handling strategy.	
	Technical Requirements known, changes in interpretation possible; or handling strategy defined, changes possible or with some complexity/challenges; or some doubt in effectiveness of handling strategy; or peer review not conducted or no results yet.	
	Technical Requirements known, interpretation clear; or handling strategy defined, minimal challenges; or minor changes possible; or confidence in the expected results; or peer review supports most of handling strategy.	
	Technical requirements known, interpretation clear; or handling strategy clearly defined and accepted; straightforward approach; or high confidence in the expected results; or peer review supports strategy.	



TECHNICAL RISK RATING EVALUATION - Page 3

PROJECT: _____ PBS - _____ DATE: _____

Resolution Path

Resolution Path is a measure of the progress made towards achieving expected results and reducing risk during implementation of the handling strategy. This criterion answers the question: "Are the results from the risk handling actions mitigating the risk(s) as expected?" From a Project perspective, the FPD determines whether handling strategies have been defined in a measureable way; whether strategies are on track for implementation; and whether the forecast reduction in risk is occurring as expected. Additionally the FPD determines whether additional knowledge gained in implementing the handling strategies shows risks at a higher risk level (greater likelihood and/or consequence) than originally conceived. This judgment could be based on a single risk or several risks. Resolution Path is determined using the following table.

Basis for rating: _____

		RATING
	Results are contrary to expected outcomes; or negative impact on risk mitigation; or strategy not working, requires revision.	
	Results are inconclusive with doubt on effectiveness; or unknown impact on risk mitigation; or risk reduction may be in jeopardy.	
	Handling strategy not started yet; or preliminary results as expected but inconclusive; or risk reduction is uncertain or somewhat less than expected; or handling strategy may need minor revision.	
	Handling producing expected results; or results support risk reduction; or strategy is on track.	
	Strategy has effectively reduced risk impact (confirmed by data or analysis).	

TECHNICAL RISK RATING

The overall project Technical Risk Rating is determined by a qualitative assessment done by the Federal Project Director. The Federal Project Director bases this judgment on the individual criteria values and other input as appropriate.

		RATING
	Project technical risk(s) require heightened attention and may require Acquisition Executive decisions on direction or resources.	
	Project technical risk(s) require additional focus and may require Acquisition Executive decisions on direction or resources.	
	Project technical risk(s) have concerns in several areas and may require additional focus by the Integrated Project Team.	
	Project technical risk(s) are manageable. Minor concern in selected areas, but additional focus not required.	
	Project technical risk(s) are manageable as planned.	

General Notes/Comments: _____



Attachment B

Quarterly Project Review (QPR) Chart

Site Name: PBS Project	
<p style="text-align: center; color: blue;">Key Technical Risk(s)</p> <p>TECHNICAL RISK RATING: 1Q08  2Q08 </p> <p>Risks: (53 High or Moderate tech risks) Processing impacted by sludge properties (chemistry/rheology/mass); Tank A return to service (Fluidized Bed Steam Reforming); unknown heel material properties; available tank farm space; tank cleaning for closure.</p> <p>Consequences: Technology development delays could result in up to 3 year delay to completion of tank closure and processing, increasing cost.</p> <hr style="border-top: 1px dashed black;"/> <p>1Q08 2Q08</p> <ul style="list-style-type: none">   Maturity: Handling strategies are in various stages of technology development; technology (wet air oxidation) development to Tank A return to service has a TRL less than 3.   Urgency: Risks could be realized in the next 6-9 mo. (esp. Tank A return to service, tank farm space, tank cleaning) resulting in an impact to critical path to completion that cannot be resolved.   Difficulty: Technical risk handling strategies are complex, but contain defined actions; uncertainty exists in completeness or overall success for wet air oxidation for Tank A return to service.   Resolution: Plans are developed, results are starting to be seen but in early stages. Preliminary results for wet air oxidation for Tank A return to service and technology for tank cleaning for closure are as expected, but inconclusive. 	<p style="text-align: center; color: blue;">QA</p>
FUNDING	CONTRACTS
<div style="display: flex; justify-content: space-between; align-items: center;">  <div style="text-align: center;"> <p>EM Environmental Management</p> <p style="font-size: small; color: green;">safety ❖ performance ❖ cleanup ❖ closure</p> </div> <div style="text-align: right; font-size: small;"> <p>www.em.doe.gov</p> </div> </div>	

Attachment C

Project Application Guidance

The following information is provided as guidance for developing the Technical Risk Rating for EM projects and completing the QPR Quad Chart technical risk quadrant.

A. What risks are considered to be “Technical Risk”?

Per the *DOE-EM Engineering & Technology Roadmap*: “Risks are known technical issues that could prevent project success. Uncertainties are indefinite or unpredictable technical aspects of a project.” For developing the Technical Risk Rating, technical risk includes any risk having an engineering or technology issue, basis, or impact, regardless of any individual risk classifications (e.g., regulatory) that may be in use for management purposes. Any potential technical implications resulting from Project risks that are not specifically categorized as “technical” (i.e., residual risk after handling or if the risk should occur) should also be considered.

B. General approach:

1. Use the Project Risk Management Plan and data as the primary source of risk information. Other sources include: risk register, risk data base, watch list, “top ten” list, external technical reviews, Technology Readiness Assessments, other reviews.
2. Review High and Moderate technical risks and risk assessment data. Consider all risks with technical implications. Perform a qualitative assessment relative to the Technical Risk Rating criteria using the existing risk information.
3. Develop the message the FPD wants to communicate to management. The content should consider the following:
 - a) What risks the FPD is concerned/worried about
 - b) Which risks could have a significant impact to project success
 - c) What consequences the risks have on the project
 - d) Whether the technology exists to address the risks
 - e) When risk impacts might be realized
 - f) Whether the risks are challenging to solve
 - g) Whether the project is making progress in mitigating risks
 - h) What help does he/she want

C. Consider all risks having technical implications regardless of categorization:

Some risks are readily identifiable as a technical risk. Other risks may not be immediately recognized as having a technical impact due to the way the risk and the potential consequence were defined and/or how the risk was categorized (i.e., “binned”) for sorting and management purposes. Risks should not be automatically eliminated from consideration when determining



the Technical Risk Rating due to how they were categorized (e.g., regulatory). See the examples shown below.

Obvious technical risk: Risk associated with use of immature or non-existent technology.

Examples:

System A return to service technology does not perform as planned. System A must be returned to service by December 2015 in order to meet operation throughput objectives. The current plan is to return System A to service using a selected technology with a backup option. The impact is the technology is not available when needed or does not meet performance expectations.

Deposits form on the waste feed nozzle to System A and the nozzle clogs interrupting operations.

Full scale facility off-gas emissions are not compliant with MACT requirements or do not meet environmental criteria during the acceptance testing causing redesign.

First of a kind facility may have unanticipated startup problems, some which could impact acceptance testing and availability during operations.

Technical risk not readily apparent: Risk associated with regulator rejection of proposed strategy that results in increased cost/schedule due to the need to apply a technical solution (even if the technology is mature) and the investigation of the technical solution is currently included within the project baseline. (If the potential solution is not currently being investigated within the project baseline, this risk would remain and be reported as Programmatic.)

Examples:

Regulators do not accept passive technologies (e.g., MNA) as final remedies. Additional remediation required beyond passive technologies using active remedies.

Post-Seismic monitoring is not included in the design of the facility. Post-seismic monitoring has been encouraged by the review board, which will result in redesign and field rework.

End state assumptions include leaving in place certain building slabs and certain underground piping infrastructure. These end state assumptions may change resulting in the need to identify method to remove and dispose of slabs and piping infrastructure.

D. Quad Chart section content expectations & guidance:

The following provides guidance and examples on how to develop the information and complete the Quad Chart sections. An effective method is to list the key risks of concern, and then for each of these risks, identify the consequence to the Project and ratings for the criteria. This information can then be used to complete the Quad Chart sections as discussed below.

▪ **Risk**

- a) State the total number of high or moderate risks with technical implications – *provides an overall reference for the extent of technical risk associated with the project*



- b) Identify the significant technical risks of concern on which the individual criterion ratings and the Technical Risk Rating are based – *risks of importance to the FPD; risks that warrant management attention*

Example:

Risks: (53 High or Moderate tech. risks) Processing impacted by sludge properties (chemistry/rheology/mass); Tank A return to service (Fluidized Bed Steam Reforming); unknown heel material properties; available tank farm space; tank cleaning for closure.

▪ **Consequences**

- a) Identify baseline impacts to the project that would occur if the risks are realized – *provides an overall indication of the potential impact to project success due to risk*
- b) Could also include performance, effectiveness, and/or operations impacts internal or external to the project – *communicates potential impacts to expected results and/or other internal or external effects*

Example:

Consequences: Technology development delays could result in up to 3 year delay to completion of tank closure and processing, increasing cost.

▪ **Maturity**

- a) Use criteria descriptions to select the rating stoplight symbol for Technical Maturity – *judgment should be based on the least mature technology associated with the significant risks; use Technology Readiness Assessment / Technology Maturation Plan Guide as appropriate (issued March 2008)*
- b) Identify the risk(s) that resulted in the selected rating – *communicates which of the significant risks has the least mature technology needing development*

Example:

Handling strategies are in various stages of technology development; technology (wet air oxidation) development for Tank A return to service has a TRL of less than 3.

▪ **Urgency**

- a) Use criteria descriptions to select the rating stoplight symbol for Risk Urgency – *judgment should be based on the significant risk or risks that potentially could be realized soonest resulting in impacts that require a change to project baseline*
- b) Identify the time frame and the risk(s) that resulted in the selected rating – *communicates which of the significant risks would be the cause of baseline impacts and how quickly action may be needed*

Example:

Any of the risks could be realized in the next 6-9 mo. (esp. Tank A return to service, tank farm space, tank cleaning) resulting in an impact to the critical path to completion that cannot be resolved.



▪ **Difficulty**

- a) Use criteria descriptions to select the rating stoplight symbol for Handling Difficulty – *judgment should be based on the handling strategy that presents the greatest challenge and/or highest level of uncertainty in achieving the expected mitigation results*
- b) Identify the challenge and the risk(s) that resulted in the selected rating – *communicates where the difficulty exists and which of the significant risks is the most difficult to resolve and has the most uncertainty in the effectiveness of the handling*

Example:

Technical risk handling strategies are complex, but contain defined actions; uncertainty exists in completeness or overall success for wet air oxidation for Tank A return to service.

▪ **Resolution**

- a) Use criteria descriptions to select the rating stoplight symbol for Resolution Path – *judgment should be based on the observed positive or negative results from the handling strategy or strategies addressing the risks having the greatest Handling Difficulty*
- b) Identify the technology development and/or engineering being worked and the risk(s) that resulted in the selected rating – *communicates what technology or engineering effort is at issue subject to the handling strategy effectiveness and which of the significant risks is dependent on the success of the handling actions*

Example:

Plans are developed, results are starting to be seen but in early stages. Preliminary results for wet air oxidation for Tank A return to service and technology for tank cleaning for closure are as expected, but inconclusive.

▪ **Technical Risk Rating**

- a) Select the rating stoplight symbol for the Technical Risk Rating – *the TRR should be based on the FPD's qualitative assessment of the overall project risk based on the judgments made for the four criteria*
- b) Communicate the level of concern and potential management action needed for technical risk – *the FPD should use the TRR to indicate his/her level of concern over risk and alert management to the potential action needed to address technical risk*
- c) Be flexible when interpreting the four criteria ratings to provide an accurate message – *the FPD may raise or lower the stoplight rating from the "average" to better communicate the degree of concern for technical risk for the project*

Example:

Three  + one  may =  if the FPD wants to communicate a higher level of concern to management



Additional Considerations

- a) Rating spotlight symbols for the criteria and the TRR from the previous QPR are carried over to show the trend to the current reporting period
- b) List only the total number of high and moderate technical risks
- c) For projects having a large number of risks, the TRR should be based on the key technical risks – *the TRR should focus on the significant risks jeopardizing project success; don't try to summarize all of the project technical risk on the Quad Chart*
- d) Include a backup slide to provide additional detail on the technical risks included in the TRR and/or additional project technical risks
- e) Keep the focus on technical discussion, not on cost or schedule impact numbers
- f) Use crisp, concise, standalone statements – *communicate without the need for clarifying discussion*
- g) The TTR is a communications tool, not a scoring measure

