

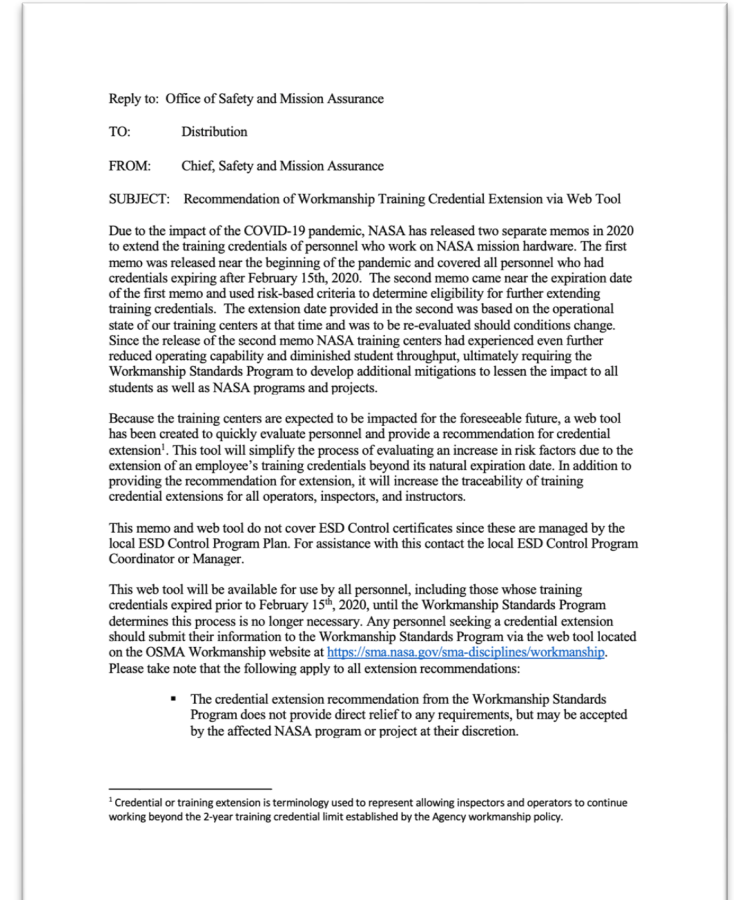
Workmanship Credential Extension Evaluation Guide

Alvin Boutte



Guide Info (1 of 2)

- This guide is to help CSOs and other project or training personnel understand the recommendation document being provided by the Workmanship Standards Program.
- Credential or training extension is terminology used to represent allowing inspectors and operators to continue working beyond the 2-year training credential limit established by the Agency workmanship policy.
- This document highlights the relevant information and provides guidance to assist programs and projects in making an informed decision in accepting the extension of training credentials or in allowing personnel to continue working with expired credentials.



Memo: Recommendation of Workmanship Training Credential Extension via Web Tool, released x/x/21



Guide Info (2 of 2)

- The project has the ultimate say in whether they will accept any recommended credential extension as well as the date to which it may be extended, the Workmanship Standards Program only provides a recommended date based on an analysis of how this might potentially impact the project.
- The tool being used was designed to quickly and objectively provide a recommendation based purely on the training information provided by the employee.

Workmanship Training Credential Extension Evaluation			
Employee Name:	Betty Cooper	Employee Email:	betty.cooper@nasa.gov
Currently Working:	yes	Work Role:	inspector
Supervisor Name:	Moose Mason	Supervisor Email:	moose.mason@nasa.gov
Training Information:			
Workmanship Areas	Last Training Completion Date	Last Duty Performance Date	Training Cycles Completed
<input checked="" type="checkbox"/> Soldering & Surface Mount Technology	5/6/20	2/2/21	3
<input checked="" type="checkbox"/> Polymeric Applications	5/31/19	8/12/20	5
<input checked="" type="checkbox"/> Crimp, Cable, & Harness	1/15/20	6/16/21	1
<input checked="" type="checkbox"/> Fiber Optics	5/13/14	4/21/21	8
Extension Recommendation			
Soldering & Surface Mount Technology:			
Extension Recommendation: Credentials Extension by Supervisor			
Recommended Extension Date: Saturday, December 16, 2023			
Extension date is based on no future performance gaps greater than 6 months. Extension recommendation and date may change once performance mitigations are implemented due to risk added by performance gaps.			
Polymeric Applications:			
Extension Recommendation: Credentials Extension by Supervisor			
Recommended Extension Date: Thursday, July 28, 2022			
Extension date is based on no future performance gaps greater than 12 months. Extension recommendation and date may change once performance mitigations are implemented due to risk added by performance gaps.			
Crimp, Cable, & Harness:			
Extension Recommendation: Credentials Extension by Supervisor			
Recommended Extension Date: Monday, August 21, 2023			
Extension date is based on no future performance gaps greater than 2 months.			
Fiber Optics:			
Extension Recommendation: Training Recommended Over Extension			
Recommended Extension Date: N/A			
Any extension for this area of workmanship cannot be recommended by the Workmanship Standards Program and must be coordinated with the affected program or project.			
<small>By signing this document I certify that all information provided is true and correct to the best of my knowledge. I acknowledge this document contains the recommendation by the Workmanship Standards Program which may be accepted at the NASA program or project's discretion, but does not provide direct relief to any requirements. Should there be any action that would change the extension recommendation (e.g. training, assessments, etc.) a new evaluation may be necessary. Recommendations will be physically or digitally stored as a record and made accessible to the NASA Workmanship Standards Program as well as any NASA program, project, or training facility that may request it.</small>			
Employee Signature		Betty Cooper	8/24/21
Supervisor or Certifying Authority Signature		Moose Mason	8/24/21

Workmanship Training Credential Extension Evaluation and Recommendations



Parts of the Document

Workmanship Training Credential Extension Evaluation			
Employee Name:	Betty Cooper	Employee Email:	betty.cooper@nasa.gov
Currently Working:	yes	Work Role:	inspector
Supervisor Name:	Moose Mason	Supervisor Email:	moose.mason@nasa.gov
Training Information:			
Workmanship Areas	Last Training Completion Date	Last Duty Performance Date	Training Cycles Completed
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_____ Employee Signature	Betty First Name	Cooper Last Name	8/24/21 Date
_____ Supervisor or Certifying Authority Signature	Moose First Name	Mason Last Name	8/24/21 Date



Employee Information

Employee first/last name and work email address.

Workmanship Training Credential Extension Evaluation			
Employee Name:	John Smith	Employee Email:	jsmith@test.mail
Currently Working:	Yes	Work Role:	Inspector
Supervisor Name:	Jane Doe	Supervisor Email:	jdoe@test.mail
Training Information:			
Workmanship Areas	Last Training Completion Date	Last Duty Performance Date	Training Cycles Completed
<input checked="" type="checkbox"/> Soldering & Surface Mount Technology	5/8/20	5/5/21	2
<input checked="" type="checkbox"/> Polymeric Applications	1/25/20	5/3/20	3
<input checked="" type="checkbox"/> Crimp, Cable, & Harness	8/1/18	6/3/21	0
<input checked="" type="checkbox"/> Fiber Optics	1/15/18	12/3/20	1

Employee Information

Employee work status. If they have no plans to work in the coming months this is "no", otherwise it will be yes.

Workmanship Training Credential Extension Evaluation

Employee Name:	John Smith	Employee Email:	jsmith@test.mail
Currently Working:	Yes	Work Role:	Inspector
Supervisor Name:	Jane Doe	Supervisor Email:	jdoe@test.mail

Training Information:

Workmanship Areas	Last Training Completion Date	Last Duty Performance Date	Training Cycles Completed
<input checked="" type="checkbox"/> Soldering & Surface Mount Technology	5/8/20	5/5/21	2
<input checked="" type="checkbox"/> Polymeric Applications	1/25/20	5/3/20	3
<input checked="" type="checkbox"/> Crimp, Cable, & Harness	8/1/18	6/3/21	0
<input checked="" type="checkbox"/> Fiber Optics	1/15/18	12/3/20	1

Employee Information

Employee role being evaluated. If they have multiple roles, they need to do multiple evaluations.

Workmanship Training Credential Extension Evaluation			
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<input checked="" type="checkbox"/> Fiber Optics	1/15/18	12/3/20	1

Employee Information

Employee's supervisor first/last name and work email address.

Workmanship Training Credential Extension Evaluation

Employee Name:	John Smith	Employee Email:	jsmith@test.mail
Currently Working:	Yes	Work Role:	Inspector
Supervisor Name:	Jane Doe	Supervisor Email:	jdoe@test.mail

Training Information:

Workmanship Areas	Last Training Completion Date	Last Duty Performance Date	Training Cycles Completed
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<input checked="" type="checkbox"/> Crimp, Cable, & Harness	8/1/18	6/3/21	0
<input checked="" type="checkbox"/> Fiber Optics	1/15/18	12/3/20	1

Employee Information

Last training completion date for each applicable area of workmanship. If they hold certificates for multiple standards in the same area (e.g., 8739.2, 8739.3, or J-STD-001) they use the most recently trained/used standard for this information. All other information MUST be to the same standard.

Workmanship Training Credential Extension Evaluation			
Employee Name:	John Smith	Employee Email:	jsmith@test.mail
Currently Working:	Yes	Work Role:	Inspector
Supervisor Name:	Jane Doe	Supervisor Email:	jdoe@test.mail
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<input checked="" type="checkbox"/> Crimp, Cable, & Harness	8/1/18	6/3/21	0
<input checked="" type="checkbox"/> Fiber Optics	1/15/18	12/3/20	1

Employee Information

Last duty completion date for each applicable area of workmanship. If they hold certificates for multiple standards in the same area (e.g., 8739.2, 8739.3, or J-STD-001) they use the information for the standard provided for the training date. All information MUST be to the same standard.

Workmanship Training Credential Extension Evaluation			
Employee Name:	John Smith	Employee Email:	jsmith@test.mail
Currently Working:	Yes	Work Role:	Inspector
Supervisor Name:	Jane Doe	Supervisor Email:	jdoe@test.mail
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<input checked="" type="checkbox"/> Crimp, Cable, & Harness	8/1/18	6/3/21	0
<input checked="" type="checkbox"/> Fiber Optics	1/15/18	12/3/20	1

Employee Information

Number of re-training cycles completed for each applicable area of workmanship. This does not include initial training, only re-training. If they have only taken the initial training course once, then this number should be 0. All information MUST be to the same standard.

Workmanship Training Credential Extension Evaluation			
Employee Name:	John Smith	Employee Email:	jsmith@test.mail
Currently Working:	Yes	Work Role:	Inspector
Supervisor Name:	Jane Doe	Supervisor Email:	jdoe@test.mail
Training Information:			
Workmanship Areas	Last Training Completion Date	Last Duty Performance Date	Training Cycles Completed
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<input checked="" type="checkbox"/> Crimp, Cable, & Harness	8/1/18	6/3/21	0
<input checked="" type="checkbox"/> Fiber Optics	1/15/18	12/3/20	1

Recommendations

Extension Recommendation	
Soldering & Surface Mount Technology:	
Extension Recommendation: Credentials Extension by Supervisor	
Recommended Extension Date: Friday, May 6, 2022	
Extension date is based on no future performance gaps greater than 1 month.	
Polymeric Applications:	
Extension Recommendation: Expired Credential Acceptance by Project Concurrence	
Recommended Extension Date: N/A	
Any extension for this area of workmanship cannot be recommended by the Workmanship Standards Program and must be coordinated with the affected program or project.	
Crimp, Cable, & Harness:	
Extension Recommendation: Credentials Extension by Supervisor	
Recommended Extension Date: Tuesday, October 5, 2021	
The extension date is limited based on a large training gap requiring other mitigations. Extension date is based on no future performance gaps greater than 3 months.	
Fiber Optics:	
Extension Recommendation: Training Recommended Over Extension	
Recommended Extension Date: N/A	
Any extension for this area of workmanship cannot be recommended by the Workmanship Standards Program and must be coordinated with the affected program or project.	

The different areas of workmanship in which the employee is being evaluated.

Recommendations

Extension Recommendation
Soldering & Surface Mount Technology:
Extension Recommendation: Credentials Extension by Supervisor Recommended Extension Date: Friday, May 6, 2022
Extension date is based on no future performance gaps greater than 1 month.
Polymeric Applications:
Extension Recommendation: Expired Credential Acceptance by Project Concurrence Recommended Extension Date: N/A
Any extension for this area of workmanship cannot be recommended by the Workmanship Standards Program and must be coordinated with the affected program or project.
Crimp, Cable, & Harness:
Extension Recommendation: Credentials Extension by Supervisor Recommended Extension Date: Tuesday, October 5, 2021
The extension date is limited based on a large training gap requiring other mitigations. Extension date is based on no future performance gaps greater than 3 months.
Fiber Optics:
Extension Recommendation: Training Recommended Over Extension Recommended Extension Date: N/A
Any extension for this area of workmanship cannot be recommended by the Workmanship Standards Program and must be coordinated with the affected program or project.

The different recommendations for each area of workmanship. This recommendation is developed using an automated program that provides the recommendation based on a calculated "risk score".

Those who fall into an acceptable range are recommended to have their credentials extended.

Those who are below the acceptable range will have their credentials expire. If their "risk score" is just below the threshold they may be allowed to continue working with project approval with the expired credential. This process is a negotiation between the employee, their supervisor, and the project representative, and must be done for each affected project.

Those who are well below the acceptable range are recommended for immediate re-training before working with NASA flight hardware. Should the project wish to allow them to continue working with their expired credential they would need to seek relief from the training requirement in NASA STD-8739.6.

Recommendations

Extension Recommendation

Soldering & Surface Mount Technology:

Extension Recommendation: Credentials Extension by Supervisor

Recommended Extension Date: Friday, May 6, 2022

Extension date is based on no future performance gaps greater than 1 month.

Polymeric Applications:

Extension Recommendation: Expired Credential Acceptance by Project Concurrence

Recommended Extension Date: N/A

Any extension for this area of workmanship cannot be recommended by the Workmanship Standards Program and must be coordinated with the affected program or project.

Crimp, Cable, & Harness:

Extension Recommendation: Credentials Extension by Supervisor

Recommended Extension Date: Tuesday, October 5, 2021

The extension date is limited based on a large training gap requiring other mitigations. Extension date is based on no future performance gaps greater than 3 months.

Fiber Optics:

Extension Recommendation: Training Recommended Over Extension

Recommended Extension Date: N/A

Any extension for this area of workmanship cannot be recommended by the Workmanship Standards Program and must be coordinated with the affected program or project.

When an employee is recommended for extension, this includes a recommended extension date. This date is the new date that the Workmanship Standards Program believes the employee's credentials should expire. This date is calculated using the same information as the "risk score" and can change if the employee's information changes, especially the last duty performance date.

Recommendations

Extension Recommendation
Soldering & Surface Mount Technology:
Extension Recommendation: Credentials Extension by Supervisor Recommended Extension Date: Friday, May 6, 2022
Extension date is based on no future performance gaps greater than 1 month.
Polymeric Applications:
Extension Recommendation: Expired Credential Acceptance by Project Concurrence Recommended Extension Date: N/A
Any extension for this area of workmanship cannot be recommended by the Workmanship Standards Program and must be coordinated with the affected program or project.
Crimp, Cable, & Harness:
Extension Recommendation: Credentials Extension by Supervisor Recommended Extension Date: Tuesday, October 5, 2021
The extension date is limited based on a large training gap requiring other mitigations. Extension date is based on no future performance gaps greater than 3 months.
Fiber Optics:
Extension Recommendation: Training Recommended Over Extension Recommended Extension Date: N/A
Any extension for this area of workmanship cannot be recommended by the Workmanship Standards Program and must be coordinated with the affected program or project.

Below the extension recommendation is a brief explanation of any conditions that exist for the extension to continue to be valid. The two examples given are based on no duty performance gaps greater than 1 month for the first and 3 months for the second. Should this occur, the employee needs to be re-evaluated using the same process with updated information.

Recommendations

Extension Recommendation

Soldering & Surface Mount Technology:

Extension Recommendation: Credentials Extension by Supervisor
Recommended Extension Date: Monday, November 29, 2021

The extension date is limited based on a large training gap requiring other mitigations. Extension recommendation assumes no future work before expiration date.

Polymeric Applications:

Extension Recommendation: Credentials Extension by Supervisor
Recommended Extension Date: Monday, August 23, 2021

The extension date is limited based on a large training gap requiring other mitigations. The extension date is limited based on a large gap in performance. Extension recommendation assumes no future work before expiration date. Extension recommendation and date may change once performance mitigations are implemented due to risk added by performance gap.

Crimp, Cable, & Harness:

Extension Recommendation: Credentials Extension by Supervisor
Recommended Extension Date: Sunday, September 5, 2021

The extension date is limited based on a large training gap requiring other mitigations. Extension recommendation assumes no future work before expiration date.

Fiber Optics:

Extension Recommendation: Training Recommended Over Extension
Recommended Extension Date: N/A

Any extension for this area of workmanship cannot be recommended by the Workmanship Standards Program and must be coordinated with the affected program or project.

When an employee is not currently working the recommendation provides a date that they may be extended given the current gap in performance. Once they begin performing their duties again, they should be re-evaluated by submitting their information again for an update.

Acknowledgement and Signatures

Key point of the Acknowledgement are:

- Workmanship Standards Program is not providing direct relief
- Recommendations are only valid if accepted by the project
- Signed copies should be made available for review

By signing this document I certify that all information provided is true and correct to the best of my knowledge. I acknowledge this document contains the recommendation by the Workmanship Standards Program which may be accepted at the NASA program or project's discretion, but does not provide direct relief to any requirements. Should there be any action that would change the extension recommendation (e.g. training, assessments, etc.) a new evaluation may be necessary. Recommendations will be physically or digitally stored as a record and made accessible to the NASA Workmanship Standards Program as well as any NASA program, project, or training facility that may request it.

<hr/>	John	Smith	8/16/21
Employee Signature	First Name	Last Name	Date
<hr/>	Jane	Doe	8/16/21
Supervisor or Certifying Authority Signature	First Name	Last Name	Date



Recommendations (1 of 3)

Credential Extension by Supervisor

The Workmanship Standards Program provides a recommended date of extension to the employee. If recommended for extension, the employee, their supervisor, or the training coordinator provides a copy of the signed recommendation (may be a part of a packet and/or spreadsheet for multiple employees) to all programs or projects they are currently working. This should go to the Project's Quality Assurance Lead or Chief Safety & Mission Assurance Officer, or their delegate, for their concurrence and to be kept as proof of valid training credentials.

Should the project accept the recommendation of the Workmanship Standards Program, then no action beyond confirming they have received the document is needed. Should the project not agree with the recommended extension date, they may choose another date or not accept the recommendation outright. Should this happen, they should quickly provide feedback to the employee, their supervisor, and/or the training coordinator informing them of that decision, which may also be done via email. Projects may request that all correspondence for these extension be done through a training coordinator and may also delegate the handling of concurrence or denial of these extensions to a lower level.



Recommendations (2 of 3)

Expired Credential Acceptance by Project Concurrence

The Workmanship Standards Program can not recommend an extension date, however, the probability of impact to programs or projects is low enough that the individual projects may permit the employee to continue work for their project only. For an employee to continue working despite expired credentials, their organization would need to provide each program or project a copy of the signed evaluation and make that request. It should go to the Project's Quality Assurance Lead or Chief Safety & Mission Assurance Officer, or their delegate, for them to determine how long they will allow the employee to continue working with expired credentials.

This process should be initiated by the employee, supervisor, or training coordinator, but may also be initiated by the project if they deem it necessary. Once the project makes this decision, they should provide all parties involved with all relevant information and details. This process may be handled and documented via email and can be done without a formal waiver to the NASA STD-8739.6 training requirements. The projects may request that all correspondence for this process be done through a training coordinator and may also delegate the handling of these allowances.



Recommendations (3 of 3)

Training Recommended Over Extension

Provided the potential impact to programs and projects, the employee is recommended to seek retraining as soon as possible prior to working on NASA mission hardware. If the program or project will allow the employee to continue work on their project, they will need to seek relief to the training requirements of NASA STD-8739.6. They may also implement and document some of the recommended mitigations and seek re-evaluation as discussed in the FAQ section “How does re-evaluation work?”.

To implement the recommended mitigations the employee, supervisor, and training coordinator should plan, execute, and document the mitigations used prior to requesting re-evaluation. Any mitigations implemented must be made available for verification by the program, project, or Workmanship Standard Program should they request it. A project waiver should be a last resort only for extenuating circumstances.



Process Hierarchy

The following slide shows the hierarchy of those taking part in the process



This is where decisions are made regarding any credential extensions. They may delegate down a level for concurrence and/or continuing work with expired credentials with WSP recommendation, but any waivers should be handled at this level.

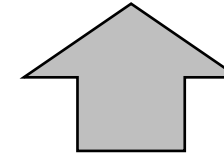
This is where organization of credential extension recommendations are compiled and provided to the project for concurrence (same process as typical validation of training certifications or certificates). This level may be delegated authority to concur with recommendations and/or allow continued work with expired credentials with WSP recommendation.

This is where the processes provided by the web tool and memo are implemented. This is also where most actions are assigned for initiating and completing the extension evaluation process. A civil servant supervisor may also serve as a training coordinator for an organization.

Concurrence Decision Level

Program/Project

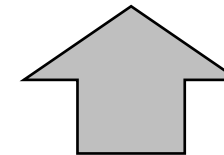
CSO/QA Lead



Coordination Level

Training Coordinator

CO or COR



Web Tool and Action Level

Supervisors

Supervisors

Trained Personnel

Trained Contractor



Green = NASA Workforce

Blue = Contractors/Suppliers

Assessments

Impact Assessment Summary

As an inspector the major concerns when it comes to training is that they understand the standard and are familiar with the processes that must be completed to produce quality hardware as well as sharp inspection skills to capture any non-conformances to the standard or engineering documentation. Periodic retraining provides a knowledge refresh of those processes, any updates to the standard, and an assessment of their skills as an inspector. The increased probability of impact being assessed below are changes in the risk factors that occur due to inspectors being non-compliant to training policy and/or continual competency requirements/recommendations.

Soldering & Surface Mount Technology:

They have maintained continuous competency by performing their duties with minimal gaps between. It has also been between 3 and 3.5 years since taking the training course, which is abnormal for workmanship training. It is likely that there has been knowledge lost from the last training course that was taken as well as potential changes to the standards or processes used. Due to their significant experience there is negligible increased probability of impact to the program or project and training credentials can be extended by the supervisor to the date provided.

Polymeric Applications:

They have had a very large gap between the performance of their duties. There has very likely been degradation of some skills required to perform in their role as well as knowledge loss. It has also been between 2 and 3 years since taking the training course, which is a bit outside of the normal period for workmanship training. Given the amount of time since training there is a risk that the employee is somewhat less familiar with the standard and processes used to perform their job duties. Due to their vast experience there is slightly increased probability of impact than normal training credentials can be extended by the supervisor to the date provided.

The Impact Assessment Summary provides some analysis of why the recommendation was made.

It gives a brief explanation of the role and what are the critical aspects of training for that role.

It discusses each specific area of workmanship and what the recommendation is for that area.

Assessments

Crimp, Cable, & Harness:

They have maintained some level of competence by not having significant gaps in the performance of their duties. There could be dulling of some of the required skills necessary to perform satisfactorily. It has also been between 3 and 3.5 years since taking the training course, which is abnormal for workmanship training. It is likely that there has been knowledge lost from the last training course that was taken as well as potential changes to the standards or processes used. Overall there is slightly increased probability of impact than normal training credentials can be extended by the supervisor to the date provided.

Fiber Optics:

They have had a somewhat large gap between the performance of their duties. There has likely been dulling of some skills required to perform in their role and some loss of knowledge. It has also been more than 3.5 years since taking the training course, which is abnormal for workmanship training. It is very likely that there has been knowledge lost from the last training course that was taken as well as potential changes to the standards or processes used. In spite of their previous experience there is significantly increased probability of impact than normal therefore it is recommended they receive training over any credential extension.

Mitigations:

To reduce the additional risk to programs and projects, the following mitigations may be used; having affected personnel pass a knowledge test administered by certified instructor to validate knowledge retention, having personnel perform their duties on non-flight and/or non-critical hardware to stop the gaps in performance, or an in-house skills assessment by a colleague, work group, or organization with sufficient knowledge of workmanship process and tools. Once mitigations have been fully implemented re-assessment will be necessary.

Finally, it provides mitigations that can be used to get an employee back to the level where they could potentially extend their training credentials.



Understanding the Assessment

- Due to factors outside of our control, we are unable at a high level to ensure that NASA STD-8739.6 training policy is fully implemented, and in the vein of risk-informed or risk-based decision making, developed this assessment. The goal of the assessment provided in the document is to let everyone (employee, supervisor, training coordinator, programs, projects, etc.) understand the recommendation being made based on the specific circumstances of the employee. It could be looked at as a technical justification for whatever is being recommended.
- While a lack of personnel training is not a risk that would be carried by the project at a high level, it is a risk factor that could potentially cost the project time or schedule due to a higher probability of operator/inspector error for various reasons. Recommendations are based on a change in probability of some negative consequence relative to the probability expected when implementing workmanship training per the policy.

