Guidance for Categorizing Deferred Maintenance, Repair Needs, and Modernization

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Acronyms and Abbreviations

CAS	Condition Assessment Survey
DM	deferred maintenance
DOE	U.S. Department of Energy
FIMS	Facilities Information Management System
ITUL	impact time is unacceptably long
OSF	other structures and facilities
RN	repair need
RTF	run-to-failure
SC	Office of Science
SSC	system, structure, and component

Definitions

Definitions from other U.S. Department of Energy (DOE) documents are cited and may be followed by additional clarifications, examples, and supplemental guidance specific to this document. Supplemental information is italicized.

Annual Laboratory Plan: Campus development strategy and research and development plan.

Condition assessment survey (CAS): The process of periodic inspection, assessment, measurement, and interpretation of the resultant data to indicate the condition of a specific asset to determine the need for some preventive or remedial action. It is a crucial part of asset management to determine the asset's remaining useful life and estimated cost to correct deficiencies (DOE O 430.1C).

Additional explanation:

- *CAS findings can come from formal assessments required by the DOE Order, a preventive/predictive maintenance activity that includes checking for proper physical and/or functional condition, or an informal inspection such as operator rounds, facility management walkthrough, or occupant observation based on occupant use of the component system.*
- *Occupant-identified conditions should typically be verified as a component system failure by someone knowledgeable of the proper condition and function of the component system, such as facility management, a craftsman, or an engineer. A Facilities Information Management System (FIMS) repair need (RN) must be identified or validated using some form of physical, in the field, inspection, or condition monitoring activity that provides the technical basis for the component system failure, rather than being generated solely as a product of a paper or analytical exercise, management decision, or life cycle forecasting activity. Life cycle forecasting can be used as a trigger for performing the inspection, but an actual/observed condition deficiency is the trigger for entering this decision tree.*

Deferred maintenance (DM): Maintenance and repairs that were not performed when they should have been or were scheduled to be and that are put off or delayed for a future period. In FIMS, only record the DM cost estimates associated with real property assets (DOE O 430.1C).

Failure to perform preventive or predictive maintenance when it should have been or was scheduled to be performed is not a RN or DM because failure to perform does not, in and of itself, constitute a deficient condition. If a deficient condition eventually results because the preventive/predictive maintenance was not performed or did not detect precursors of the deficiency, then the resulting deficient condition would be a RN.

Deficiency: The difference between an asset's current physical condition and its most recently configured capacity, efficiency, or capability (DOE O 430.1C).

For the purposes of this document, deficiency also means the difference between the current configuration and the mission needs.

Easily achieved, low-cost solution within a reasonable amount of time: Minor repairs that are within normal maintenance budgets, have only a minor mission impact, are actively being tracked to completion, and are prioritized such that there is a high level of confidence that the repair will be completed before the next reporting cycle. This can include SSC's that have a run to failure maintenance strategy.

Facilities Information Management System (FIMS): DOE's corporate real property inventory system. FIMS stores real property asset data, including data for the Federal Real Property Profile annual submission (DOE O 430.1C). *The system is a database that provides DOE with an inventory and management tool that assists with planning and managing all real property assets.*

Failed: An observable or measurable inability to function at the most recently configured capacity, efficiency, or capabilities or within performance tolerances (including safety or environmental).

An item is not considered failed solely because of design errors or because it cannot meet changing performance, code, or regulatory requirements that exceed the original operational requirements. An item is not considered failed in the context of FIMS reporting based solely on the following:

- its age, or analytical exercise, or life cycle forecasting techniques,
- existence of design errors, or
- gaps in current or changing code/regulatory requirements.

Good working order: Not damaged, not in need of repair, and operating within normal limits.

Impact time is unacceptably long (ITUL): The time it takes to resolve a deficiency is unacceptable. An example is a four-week procurement lead time on a critical 1600A circuit breaker. The impact time might not be a factor when a spare is onsite.

Life cycle: The life of an asset from planning and budgeting through acquisition, sustainment, and disposition (DOE O 430.1C).

Level 1 and Level 2 managers: Senior managers at the highest level of the organization that have the authority to make mission based risk decisions.

Not RN, DM, or modernization in FIMS: No changes, tracking, or reporting are necessary in the Repair Needs, Deferred Maintenance. or Modernization fields in FIMS. However, other FIMS fields could be affected and require updates.

Obsolescence: The state of being antiquated, archaic, or out-of-date.

Obsolescence can sometimes result in technical support, repair services, or replacement parts being scarce, inadequate, or unavailable.

Equipment obsolescence should not be confused with equipment that is no longer needed and/or abandoned in place. RN/DM decisions about such equipment should be made based on the consequence of no action using the same process as for equipment that is needed.

Examples include the following:

- *Technical support or repair services, whether from the manufacturer or other qualified provider, are the only appropriate method for maintaining or repairing the equipment but will be discontinued.*
- *New repair/replacement parts are no longer being produced, so they are only available as long as current stocks last or from third-party "recycling" services.*
- *Failure is expected to result in long outages and suboptimal repair practices because of lack of proper repair support or parts.*
- *Abandoned in place equipment that still functions. Demolition/removal of such equipment should not be considered maintenance.*
- *A fire alarm control panel manufacturer has stopped providing technical support, software upgrades, or spare parts.*
- *The ability to perform repairs is at risk because new or refurbished spare parts are no longer available or only available via third-party providers (e.g., e-Bay, Amazon, recycling centers).*
- *Current software applications will no longer interface with or operate within the computer's operating system.*

Operating as designed: A system, structure, or component is functional and meeting all specifications and design criteria.

Optimum period: That time in the life cycle of an asset when maintenance actions should be accomplished to preserve and maximize the useful life of the asset. The determination is based on engineering/maintenance analysis and is independent of funding availability or other resource implications (DOE O 430.1C).

Ownership: A FIMS field that identifies DOE's legal interest in or right to use real property, including outright title (DOE FIMS User's Guide).

Property ID: A unique control number assigned to a property (DOE FIMS User's Guide).

Property name: The name assigned to a specific property (DOE FIMS User's Guide).

Property type: Identifies the type of real property asset. The choices are as follows:

- Building – A building is a constructed asset that is enclosed with walls, a roof, and provides space for agencies to perform activities or store materials, as well as space in which people live or work. Fully enclosed tents should also be recorded in this category. Assembled modular units (triple wide or larger) should be recorded in FIMS with a Property Type of Building.

- OSF – OSFs include any fixed real property improvements to land that are not classifiable as a building or real property trailer; e.g., bridges, towers, roads, and fences. It also includes site utility systems used to generate or distribute any services such as heat, electricity, sewage, gas, and water. Tents that are not fully enclosed should be recorded in this category. If an OSF is designed solely to house utilities and meets building criteria, the entire system is to be tracked in FIMS as a building.
- Land – A parcel of the Earth's surface that has specific boundaries, which allows legal interest to be held.
- Trailer – The attribute that distinguishes real property trailers from personal property trailers is permanence. A trailer that is permanently affixed to the ground is properly classified as real property and should be entered into FIMS. Trailers, which are not permanently attached to the ground, are properly classified as personal property and therefore are not entered into FIMS. Recognizing there are no hard and fast rules that would allow a definitive determination to be made in all cases, sites should be granted latitude to make the decision on a case-by-case basis. In making the real vs. personal property decision, sites should consider how permanent the trailer is. Indicators of permanence may include one or more of the following:
  - permanent utility connection(s)
  - attachment to the ground in such a way that does not facilitate quick or easy relocation.

Assembled modular units (triple wide or larger) should be recorded in FIMS with a Property Type of Building. (DOE FIMS User's Guide)

Real property asset: Distinct parcel, building, real property trailer, other structure or facility, or interest acquired by or operated for the benefit of the U.S. Department of Energy (DOE O 430.1C).

Real property unique ID: System-generated number used to uniquely identify a property (DOE FIMS User's Guide).

Repair need (RN): The estimated cost to restore all deficiencies identified, for a real property asset during a condition assessment survey, to a state substantially equivalent to the most recently configured capacity, efficiency, or capability as required by the mission. The "need" originates from the real property asset, not necessarily management.

Repair needs will always equal or exceed deferred maintenance; the difference between the two depends on each noted deficiency's optimum period and acceptance of risk by management (DOE FIMS User's Guide).

For the purposes of this document, RN only applies to deficiencies that are repairs, not improvements.

RSMeans: A cost estimating system accepted by the DOE-Office of Science.

Run-to-failure (RTF) equipment: RTF is a sustainment strategy by which equipment is replaced only if it fails, and minor deficiencies are not addressed unless they affect life-extension support by a reasonable economic payback. However, these deficiencies must be reported as RNs to reflect the condition of the equipment. RTF items are low-risk, low-cost (within budgets), easily repaired, or easily replaced assets whose failure would not cause an unacceptable programmatic or operational impact before it could be repaired or replaced. In addition, the failure should not have any unacceptable substantial secondary impacts such as a window leak causing substantial water damage to other finished surfaces or equipment.

Examples include the following:

- Lighting fixtures operating correctly, regardless of age. However, sites may replace fixtures or lamps as part of a cost-savings strategy.
- Small general exhaust fans (i.e., 120-volt, 500 cfm restroom exhaust fan); note that the voltage and size are not prescriptive in this example. Each site will consider each fan's size and intended purpose to determine whether a fan qualifies as RTF.
- Interior finishes with minor defects (i.e., scratches, dents/ dings, water spots, etc. on painted sheetrock walls, dropped ceiling tiles and carpet). This assumes no inherent safety issues exist with the defects (i.e., a tripping hazard caused by degraded carpet).
- Wiring devices (switches, receptacles, cover plates, occupancy sensors, etc.) that are replaced on an as-needed basis.
- Minor deficiencies of doors, windows, and associated hardware (closers, weather stripping, etc.) that are repaired by routine maintenance activities.
- Plumbing fixtures (faucets, sinks, commodes, etc.) with minor deficiencies (leaks, broken handles, etc.) that are repaired by routine maintenance activities.
- Small (i.e., <2 ton) through-wall or window air-conditioning units and heat pumps that are typically repaired or replaced only when they fail.

Service life: The normal operating life stated in years in terms of utility to the owner. (DOE O 430.1C).

Single point failure: A single component that can prevent a system from working properly.

SSC mission impact: The value a system, structure, or component brings to the performance of the mission as defined by one of the following categories:

- High – SSCs deemed necessary to perform the primary missions assigned to a particular site. This would encompass any facility or infrastructure primarily used to perform or support scientific, production, environmental restoration, or stockpile stewardship and without which, operations would be disrupted or placed at risk. SSCs that if failed or were not able to function would immediately disrupt or place at risk operations that are impactful to the laboratory's mission.

- Medium – SSCs that play a supporting role in meeting the primary missions assigned to a particular site. Loss of Medium Impact SSCs would not immediately disrupt operations and can be reasonably restored or otherwise addressed prior to affecting operations. SSCs that if failed or were not able to function would not immediately impact the laboratory's mission. This includes SSC's that have a reduced failure impact because work arounds are in place or SSCs that can be reasonable restored prior to affecting operations. The loss of a Medium Impact SSC can also represent a major inconvenience to a significant number of staff or an important operation.
- Low – SSCs not in support of the primary missions assigned to a particular site, but in support of secondary missions and/or quality of workplace initiatives. The loss of Low Impact SSCs usually result in minor inconveniences but can indirectly affect operations if the SSC is unavailable for an extended period. Further, assets determined to be excess to the site mission fall under this category.

Examples include the following:

- Heat pump examples
    - A heat pump serving a cold room that stores critical research would be considered to have mission impact of high because a failure would have a major impact to the mission. If a redundant heat pump were to be installed for the cold room, the mission impact could be reduced to medium.
    - A heat pump in a large office building would be considered to have a mission impact of high because the failure of the heat pump would cause a large number of people to find alternate work locations.
    - A heat pump in a small office trailer would be considered to have a mission impact of medium because the number of people impacted would be small.
- Water heater examples:
    - If a laboratory has a requirement that the eye wash stations have to deliver tempered water between 68 degrees Fahrenheit and 74 degrees Fahrenheit in order to perform work in the labs, a failure of the water heater would have a mission impact of high. If there was a redundant water heater installed but only a single mixing valve then the water heater would have mission impact of medium but the mixing valve would have a mission impact of high.
    - A water heater in an office building that delivered hot water to bathrooms and a kitchenette would have a mission impact of medium.
- Paint example:
    - The paint in a class 1,000 clean would have a mission impact of high because a failure of the paint would impact the mission of the clean room.

  - The paint on the outside of a building that was protecting the siding from damage would have a mission impact of medium. If a building needed painting for cosmetic reasons, then the mission impact would be low.

Shutdown: A building, trailer, or OSF that is no longer in use (and there is no future potential for its use) and is awaiting disposition regardless of when actual disposition is slated to occur (DOE FIMS User's Guide).

Standby: A building, trailer, or OSF that is temporarily shut down. The asset is in one of the following situations:

- undergoing modification (renovation, betterment, alteration, etc.) to meet a current need
- awaiting an expected future need
- awaiting transfer to another program secretarial officer in order to accommodate a current or future need
- awaiting excess screening to shut down (DOE FIMS User's Guide).

Sustainment: Maintenance, repair, or renovation activities necessary to keep a real property asset in good working order over its useful life (DOE O 430.1C).

This includes regularly scheduled maintenance as well as anticipated major repairs or replacement of components that occur periodically over the expected service life of the facilities. In addition, this includes equipment obsolescence (see definition of obsolescence). Active failed equipment should be classified as RN. Inactive failed equipment (legacy equipment) should not be considered as RN unless its reuse is considered possible. Examples include the following:

- *replacement of a heating, ventilation, and air-conditioning unit*
- *replacement of a retirement unit*
- *repair of damaged sheetrock wall*
- *painting and preservation of exterior siding*
- *replacement of a drive belt*
- *replacement of active obsolete equipment*
- *repair and maintenance of pavement*
- *repair or replacement of a piping leak*
- *unplugging a sewer pipe.*

Systems, structures, and components (SSCs): A general term encompassing all the structures such as buildings, trailers, or OSFs as well as the fixtures within those structures. The term does not encompass human or administrative factors.

UNIFORMAT: A standardized hierarchical structure used to classify building elements and related site work. UNIFORMAT II refers to the second level of the hierarchical structure.

Utilities: Systems used to generate or distribute any services such as heat, electricity, sewage, gas, and water (DOE O 430.1C).

Workaround exists: There is a temporary solution to a failure available that would reduce the impact to the mission or operations to an acceptable level. Examples are:

- a simple repair can be made within an acceptable amount of time
- replacement can be made with available spare parts within an acceptable amount of time
- the system or component is redundant
- a failure would not impact the mission or operations

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Tables

1.0 Introduction

Staff from 10 U.S. Department of Energy–Office of Science (DOE-SC) and Office of Nuclear Energy national laboratories collaborated to create this guidance document with the intent of enabling the national laboratories to develop site-specific internal procedures that will foster consistent reporting across all DOE-SC sites of repair needs (RNs), deferred maintenance (DM), and modernization of real property assets such as buildings, trailers, and other structures and facilities (OSFs).

The ensuing sections address the categorization of deficiencies and the documentation of related actions (RN, DM, or modernization).

1.1 Purpose

The purpose of this document is to provide supplemental guidance to DOE O 430.1C, *Real Property Asset Management* (DOE O 430.1C) and the *Facilities Information Management System (FIMS) User's Guide* (DOE FIMS User's Guide) about how to categorize and document FIMS reportable RNs, DM, and modernization. The intent of this document is as follows:

- Create a consistent process for categorizing RNs, DM, and modernization that is used by all DOE-SC labs.
- Develop a process that allows for and documents risk-based DM reporting decisions by Level 1 and Level 2 managers.
- Leverage internal expertise to develop cost estimates rather than auto-generated cost estimates from life cycle analysis tools.
- Establish a DM Committee that provides recommendations and ongoing improvements to this document.

1.2 How to Use this Document

When categorizing and documenting FIMS reportable RNs, DM, and modernization:

- Read and understand the definitions provided at the front of this document.
- Follow the process presented in the RN/DM and Modernization Decision Process Chart presented in Section 2.0.
- Use the associated RN/DM Sustainment Chart (a decision element within the RN/DM and Modernization Decision Process Chart) to determine the mission risk associated with the deficiency and the condition of the system, structure, and component (SSC).
- Follow the procedural guidance presented in Section 2.0 for categorizing deficiencies and Section 3.0 for documenting RNs, DM, and modernization needs.

2.0 Categorization of Deficiency

The categorization of deficiencies involves the use of the RN/DM and Modernization Decision Process Chart, its associated RN/DM Sustainment Chart, and process steps presented in the following sections.

The ensuing information in this section is intended to accompany and reflect elements presented in the two charts and aid users when categorizing potential deficiencies as RNs, DM, modernization, or not reportable in FIMS.

Categorization examples are provided in Appendix A.

2.1 How to Use the RN/DM and Modernization Decision Chart

The RN/DM and Modernization Decision Process Chart presented in Figure 1 contains ovals, diamonds, and rectangles.

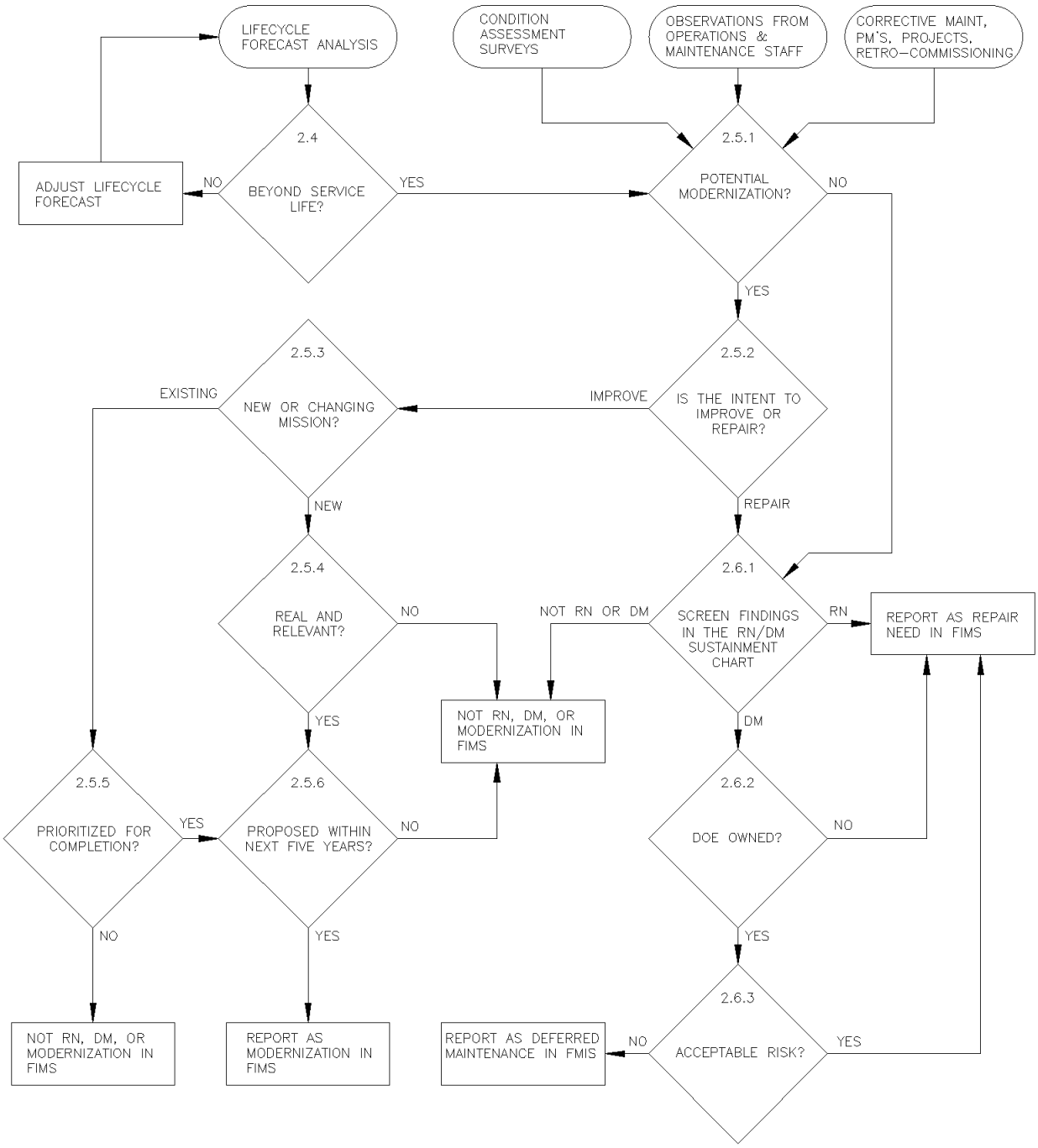
- The ovals are inputs or potential sources to help identify deficiencies.
- The diamonds are decision elements. In the upper part of each diamond there is a number that represents the procedure section. The corresponding procedure section provides the supplementary information needed to make the decision. Understanding the terms in the Definitions section of this guidance document is also critical to the decision-making process.
- The rectangles are decision outputs, such as report as RN, DM, modernization, or not reportable as RN, DM, or modernization in FIMS.

2.2 How to Use the RN/DM Sustainment Chart

The RN/DM Sustainment Chart presented in Table 1 is a decision element within the RN/DM and Modernization Decision Process Chart. The RN/DM Sustainment Chart is a decision matrix that considers the mission risk associated with the deficiency and the condition of the SSC. The RN/DM Sustainment Chart has the following outputs: RN, DM, or that the deficiency is not reportable as RN or DM in FIMS. How the deficiency is categorized by the RN/DM Sustainment Chart is based on the decisions made that steer you to a specific row and column on the chart.

Selecting the correct row in the RN/DM Sustainment Chart requires three decisions to be made in columns A, B, and C. Each decision needs to be made in order from left to right and follow the same format as a decision tree.

Selecting the correct column in the RN/DM Sustainment Chart requires one of the six SSC conditions from row 1 to be selected (in columns D through M). In row 2, a second decision related to the obsolescence of the SSC needs to be made to land in the appropriate column.


LIFECYCLE FORECAST ANALYSIS
CONDITION ASSESSMENT SURVEYS
OBSERVATIONS FROM OPERATIONS & MAINTENANCE STAFF
CORRECTIVE MAINT, PM'S, PROJECTS, RETRO-COMMISSIONING
2.4
BEYOND SERVICE LIFE?
NO
YES
ADJUST LIFECYCLE FORECAST
2.5.1
POTENTIAL MODERNIZATION?
NO
YES
2.5.3
NEW OR CHANGING MISSION?
EXISTING
IMPROVE
2.5.2
IS THE INTENT TO IMPROVE OR REPAIR?
NEW
REPAIR
2.5.4
REAL AND RELEVANT?
NO
YES
2.6.1
SCREEN FINDINGS IN THE RN/DM SUSTAINMENT CHART
NOT RN OR DM
RN
DM
REPORT AS REPAIR NEED IN FIMS
NOT RN, DM, OR MODERNIZATION IN FIMS
2.5.5
PRIORITIZED FOR COMPLETION?
YES
NO
2.5.6
PROPOSED WITHIN NEXT FIVE YEARS?
NO
YES
2.6.2
DOE OWNED?
NO
YES
2.6.3
ACCEPTABLE RISK?
NO
YES
NOT RN, DM, OR MODERNIZATION IN FIMS
REPORT AS MODERNIZATION IN FIMS
REPORT AS DEFERRED MAINTENANCE IN FMIS

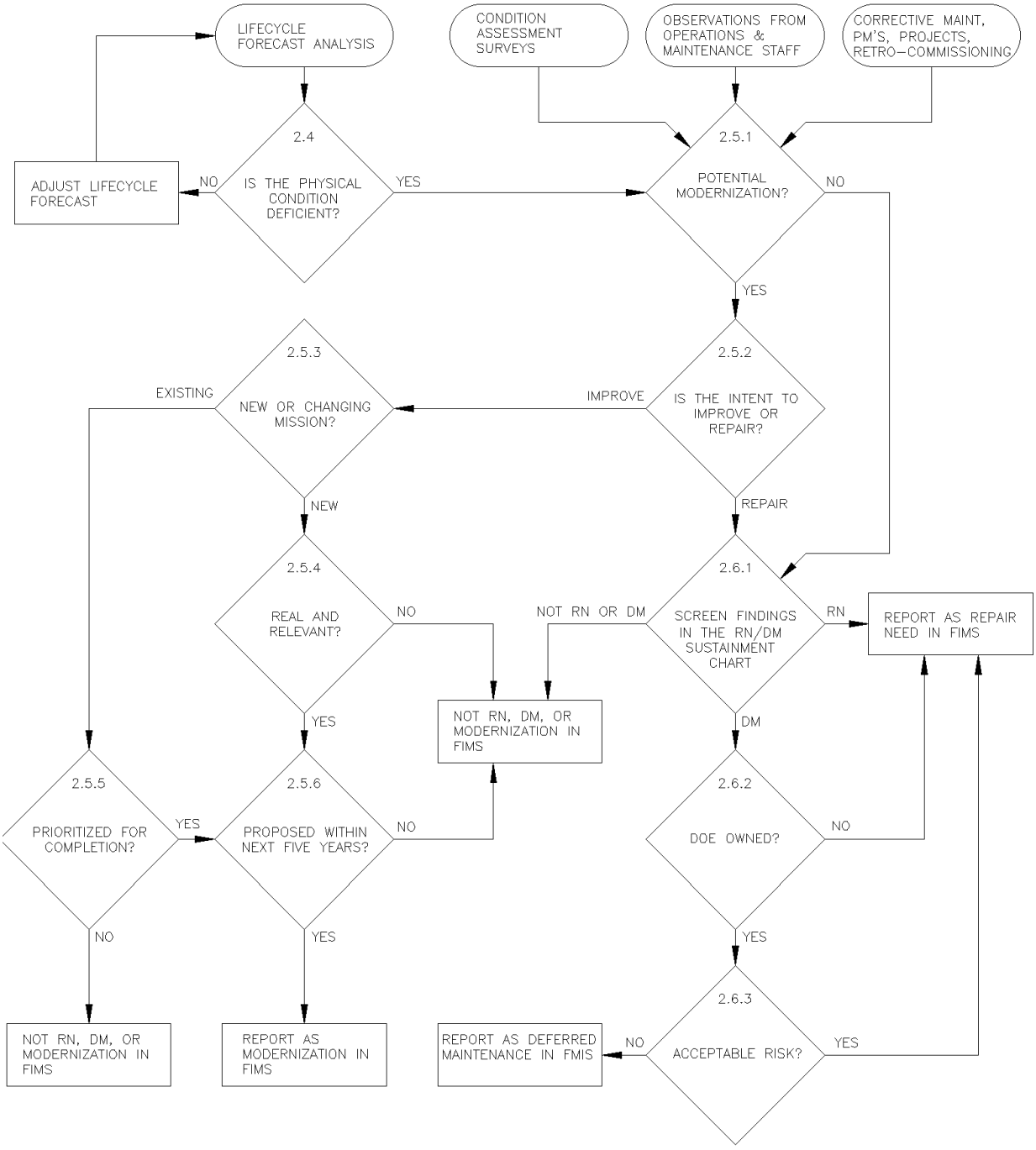


Figure 1. RN/DM and Modernization Decision Process Chart

Table 1. RN/DM Sustainment Chart

SSC Mission Impact[a]	Easily Achieved, Low-Cost, Solution Within a Reasonable Amount of Time[a]	Work around Exists[a]	SSC Functioning Properly Within the Optimum Period[a]		SSC Functioning Properly but at or Near the End of the Optimum Period [a]		SSC is Exhibiting Signs of End of Life but is Within the Optimum Period [a]		SSC Requires Extraordinary Effort to Remain in Service or Practical Experience Shows SSC to be Beyond the Optimum Period[a]		SSC has Failed[a]		
			Not Obsolete	Obsolete or ITUL[b]	Not Obsolete	Obsolete or ITUL[b]	Not Obsolete	Obsolete or ITUL[b]	Not Obsolete	Obsolete or ITUL[b]	Not Obsolete	Obsolete or ITUL[b]	
Low[a]	Yes	-	-	-	-	-	-	RN	-	RN	RN	RN	1
	No	-	-	-	-	-	RN	RN	RN	RN	RN	RN	2
Medium[a]	Yes	No	-	-	-	-	-	RN	RN	DM	DM	DM	3
		Yes	-	-	-	-	-	RN	-	RN	RN	DM	4
	No	No	-	-	-	RN	RN	DM	RN	DM	DM	DM	5
		Yes	-	-	-	-	RN	RN	RN	RN	DM	DM	6
High[a]	Yes	No	-	-	-	DM	RN	DM	DM	DM	DM	DM	7
		Yes	-	-	-	RN	-	DM	RN	DM	DM	DM	8
	No	No	-	RN	RN	DM	RN	DM	DM	DM	DM	DM	9
		Yes	-	-	-	RN	RN	DM	RN	DM	DM	DM	10
			A	B	C	D	E	F	G	H	I	J	

DM = deferred maintenance; RN = repair need; SSC = system, structure, or component.
(a) See the definitions in the front of this document.
(b) ITUL: impact time is unacceptably long. If a spare is onsite, replacement lead time may not be a factor.
- = Not RN, DM, or modernization in FIMS

2.3 Decision Inputs

CONDUCT the following activities to identify deficiencies that will be categorized using the RN/DM and Modernization Decision Process Chart.

- SEARCH the work orders using the computerized maintenance management system for work scopes that could potentially be categorized as a RN, DM, or modernization.
- REVIEW issues identified during the performance of preventive and predictive maintenance.
- REVIEW proposed and ongoing project lists.
- PERFORM walkthroughs and operator rounds, and INITIATE discussions with people who operate, maintain, and use the equipment within the asset.
- REVIEW previous condition assessment surveys and functionality assessments.
- REVIEW commissioning and/or recommissioning reports.

2.4 Beyond Service Life

Life cycle forecast analysis can be used to track/forecast the service life of an SSC.

This guidance document accounts for the use of life cycle forecast analysis but does not require it. When using life cycle forecast analysis:

1. For each asset identified by the life cycle forecasting analysis as being beyond its service life, EVALUATE the physical condition of the asset to determine if the asset is beyond the optimum period or the physical condition supports the need for sustainment.
2. ADJUST the life cycle forecasts to match the observed physical condition of the SSC as necessary.

2.5 Modernization

Modernization activities are necessary to keep existing facilities relevant and updated in an environment of changing standards and missions. This includes activities that improve quality, increase capacity, extend an asset's useful life, and/or enhance an asset's value (DOE O 430.1C). Modernization also includes those activities necessary to meet the asset's current mission needs.

2.5.1 Potential Modernization

DETERMINE whether the deficiency has the potential to be categorized as a modernization.

If any of the following statements are true, the deficiency could represent a modernization need.

- The asset requires a new capability to meet the mission needs.
- The asset requires improvements to meet all the codes and standards applicable to the SSC and/or mission. If the asset does not meet the current codes and standards, but does meet the code of record, then the improvements would NOT be considered modernization unless the mission requires that the asset meet the current codes and standards. An example would be a building's fire sprinkler system that met the code of record but needed to be updated to the current code to bring in a new microscope.
- Actions need to be taken to extend the asset's life or the life of systems within the asset. This does not include corrective or preventive maintenance.
- Actions need to be taken to increase quality, such as replacing functioning components that are within their life cycle. Another example is adding an isolation transformer to improve the electrical power quality.
- Actions, such as adding redundancy, need to be taken to reduce operational risk.
- Actions need to be taken to increase capacity; such as increasing the heating capacity or cooling capacity in a building.
- Actions need to be taken to increase safety; such as adding a safety railing and installing equipment guarding.
- Modifications that eliminate compensatory actions need to be made. An example of a compensatory action would be using a cord and plug space heater in a water entry room during the winter because normal building systems cannot heat the space.
- Actions need to be taken to increase efficiency.
- Actions need to be taken to comply with regulations.

- Actions need to be taken to improve the aesthetics of the asset.
- Additional space is required.
- Actions need to be taken that will result in an increase in the asset's value.

2.5.2 Is the Intent to Improve or Repair

DETERMINE whether the intent of resolving the deficiency is to improve or repair.

Many deficiencies that meet the potential modernization criteria listed in Section 2.3.1 could be categorized as a RN and possibly DM. The decision about how to categorize the deficiency depends on the intent of the deficiency's resolution. If the SSC is meeting its functional requirements and the intent is to make an improvement, then the deficiency would still be considered a potential modernization. However, if the SSC is not meeting its original function and the intent is to make a repair that only restores the SSC to its original function, then the deficiency would be categorized as a RN and possibly DM.

The following are intended to be examples in the application of this approach:

- A chilled water plant is required to deliver 600 tons of cooling to meet the current mission need and the existing chiller water plant has a capacity of 700 tons of cooling. The existing chilled water plant is at the end of its life cycle. Replacing the existing 700-ton chilled water system with a new and more efficient chilled water system complete with all the latest upgrades and enhancements would not be considered modernization as long as the new chilled water system has a capacity similar to 700 tons. The reasoning for this is that the intent is not to improve the chilled water plant; instead the intent is to repair or bring the chilled water plant back to its original capacity.
- A building has old single-pane windows that are being replaced. If the reason the windows are being replaced is because they are beyond their life cycle and exhibiting signs of failure, such as failing seals and discoloration, then the intent is to repair the windows and the resolution of the deficiency would be a RN and possibly DM. However, if the windows are being replaced as part of an energy efficiency enhancement, then the intent is to improve the windows.
- If the current mission need for a chilled water plant is 600 tons of cooling and the chilled water plant has a capacity of 700 tons of cooling but the plant can only deliver 500 tons of cooling because of mechanical problems, then the chilled water plant is unable to meet the current mission need. Because the equipment has the capacity to meet the current mission need when functioning properly, this example is considered to be a repair.
- A 40 hp pump failed and was replaced with a 50 hp pump. If the 50 hp pump was installed because it was the only pump available at the time of the repair, the pump replacement would be considered a repair. However, if the 40 hp pump was no longer sufficient to support the process and a 50 hp pump was installed to resolve the deficiency by providing additional pumping capacity, then the pump replacement would be an improvement.

- A project has determined that compressed air is a critical utility and has requested that a building install a second air compressor to minimize the operational risk. The compressed air system will be set up such that only one air compressor can run at a time. Even though the overall compressed air capacity had not increased, this would be considered an improvement because the intent of the redundant air compressor is to increase reliability by adding something new to the system.

2.5.3 New or Changing Mission

DETERMINE whether the deficiency impacts a current Laboratory mission or is part of a new or changing Laboratory mission.

If a deficiency prevents the laboratory from being able to deliver the appropriate capability or capacity to meet current mission needs, the deficiency would not be considered a new or changing mission.

If a new project adds to or changes the current mission, the subsequent changes to the laboratory would be considered a new or changing mission.

The following are intended to be examples in the application of this approach:

- A chilled water plant is capable of meeting the current mission needs but a new project is being proposed that would require the capacity of the chilled water plant to be expanded. Since the chilled water plant is capable of meeting the current mission needs, the new project to add cooling capacity would be considered a new or changing mission.
- A critical laboratory does not have the capacity to meet the heating requirements when the outside temperature drops below 10 degrees Fahrenheit. To address the issue, a project to add an additional boiler to the laboratory's heating system has been proposed. Since the laboratory is not meeting the current mission needs, the proposed project would be not be considered a new or changing mission.
- During an inspection, a fixed ladder was found to be in good condition but not up to code. The improvements required to bring the ladder up to code would not be considered a new or changing mission.

2.5.4 Real and Relevant

DETERMINE if the deficiency is real and relevant.

If a new project adds to or changes the current mission, the new project would not be considered a potential modernization until at least one of the following criteria is met:

- the project has been funded,
- the project has been incorporated into the Annual Laboratory Plan,
- or the project has been incorporated into other strategic planning documents and there is a high probability the project will be executed.

The following are intended to be examples in the application of this approach:

- A new project has been proposed to increase a laboratory's wet chemistry capability. The project will convert two laser laboratories into wet chemistry spaces. If the proposed project has been funded and is scheduled to begin the following year, then the proposed project would be considered part of the Laboratory's mission and the project would be categorized as a potential modernization. However, if the project has not been funded and it is uncertain whether or not proposed will be executed, then the project would not be categorized as a potential modernization.
- A research organization would like to perform large-scale battery testing. To create the capability, several modifications would need to be made to three different laboratories. New electrical infrastructure would need to be brought in and the ventilation systems would need to be modified. The laboratory does perform small battery testing but nothing at the large scale being proposed by the current project. In this case, the mission is changing from small-scale to large-scale battery testing. If the large-scale battery testing is not currently funded but is part of the Annual Laboratory Plan and proposed to start in four years, then the project would be categorized as a potential modernization. If the project was not part of the Annual Laboratory Plan but was included in another strategic planning document, the project probably would not be considered a potential modernization because a lot can happen in four years and there is a good chance that the laboratory priorities will have changed before the project is funded or scheduled to start.

2.5.5 Prioritized for Completion

DETERMINE if the project is prioritized high enough to be completed. These are typically facility improvement type activities and include projects that are either part of or likely to be added to short term or long-range budget planning. This is a subjective decision that can usually best be answered by knowledgeable people asking themselves, "are we really going to do this?".

Projects that must be completed to be in compliance with applicable codes, standards, regulations, or other requirements are assumed to have sufficient priority. These types of deficiencies should be categorized as potential modernizations regardless of funding or priority.

The following are intended to be examples in the application of this approach:

- A railing on a mezzanine is found to be two inches below the height required by code. Since this is a safety issue regarding a code, a project to raise or replace the mezzanine railing is assumed to have the prioritization necessary to resolve the issue.
- A project has been proposed that would minimize the need for keys in a building by installing electronic readers and electric strikes on the doors to laboratory spaces and mechanical rooms. Everyone thinks the readers are a great idea and the operations manager, who is in charge of the budget and setting priorities, has committed to getting the work done. At this time, the project would be considered a potential modernization. But when the budget was finalized three months later, the project wasn't added upcoming budget or the long-range planning document. Since this project was not added to the

budget, it is probably not a high priority for the operations manager and is no longer considered a potential modernization.

2.5.6 Project Proposed Within the Next Five Years

DETERMINE if the project is proposed to occur within the next five years.

To keep the modernization costs recorded in the FIMS relevant and updated in an environment of changing standards and missions, modernization costs are only recorded in the FIMS if the project is proposed to occur within the next five years.

2.6 Repair Needs and Deferred Maintenance

A repair is the restoration of any failed or malfunctioning SSC to its intended function or design condition. It may include replacement of parts, components, or assemblies. Repair does not include activities directed toward expanding the capacity of an asset or otherwise upgrading it to serve needs different from, or significantly greater than, its current use. A RN is the estimated cost to restore a real property asset's component system failure. DM is the RNs that were not performed when they should have been or were scheduled to be performed but were put off or delayed for future action. Hence, all DM is a RN, but not all RNs are considered DM.

2.6.1 Screen Finding in the RN/DM Sustainment Chart

DETERMINE whether the deficiency is a RN or DM.

Understanding the difference between RNs and DM is complicated and sometimes subjective. The difference between the two generally depends on the deficiency's optimum period and acceptance of the risk by management. The RN/DM Sustainment Chart shown in Table 1 was created to help sites consistently categorize RNs and DM. See section 2.2 of this guidance document for instructions on how to use the RN/DM Sustainment Chart.

2.6.2 DOE-Owned Asset

DETERMINE whether the real property asset is owned by DOE.

Only DOE-owned real property assets can have DM recorded in FIMS. Deficiencies for non-DOE-Owned asset (leased, permitted, etc.) that meet the DM criteria in the RN/DM Sustainment Chart will only be recorded as a RN.

2.6.3 Acceptable Risk

DETERMINE whether the risk is acceptable.

Management has the option to accept the risk associated with a physical condition deficiency and report the deficiency as a RN only in the FIMS. The decision to not report the deficient

condition as DM is management's acknowledgment that the level of risk of the deficient condition resulting in an uncertain event/condition that has a negative impact on achieving the Laboratory site's objectives is low enough to continue operation until the repair can be accomplished. The acceptance of risk is documented and the decision to accept the risk is made by a Level 1 or Level 2 manager who has a broad and wholistic understanding of the laboratory site.

The following factors may influence the decision to accept the risk:

- Where the asset is in its life cycle, as determined from commercial statistical charts, by a site's specific experience, or observations made during physical inspections or tests.
- The consequences of an unplanned failure. Consequences to consider include, but are not limited to, programmatic, environmental, safety, health, security, economic, and public perception consequences.
- The time required to repair or replace the equipment or part.
- The FIMS facility status code and excess indicator. For example, deficiencies with non-operating (standby or shutdown) assets can still present an unacceptable risk to safety, security, the environment, structural and closure integrity, and the ability or cost to restart a standby asset, to name a few, if not corrected.

3.0 Documenting Repair Needs, Deferred Maintenance, and Modernization

RNs, DM, and modernizations are recorded by FIMS real property asset and are entered annually into the FIMS database. For every real property asset in FIMS, there should be supporting documentation that details the asset's RN, DM, modernization, and the acceptance of risk. It is acceptable to include the documentation as part of the condition assessment survey.

Use a form or database to document the information required in this section.

3.1 FIMS Information

The following FIMS information should be included in the documentation:

- property ID
- property name
- mission dependency
- property type
- ownership.

3.2 Identification of the System, Structure, or Component

When a deficiency is identified, the SSC associated with the deficiency needs to be documented along with the UNIFORMAT II classification. Select the UNIFORMAT II level of granularity that best matches the description of the deficiency.

3.3 Description of the Deficiency

A description of the deficiency and what it will take to correct it needs to be provided. The description of the deficiency should be at a high level but detailed enough to convey the full breadth of the deficiency. The proposed correction to the deficiency should focus on what needs to be corrected or modified and not necessarily how the deficiency needs to be corrected or modified.

Deficiencies can be logically grouped together as a single project. If a steam heating system is being replaced by a hydronic system, it would not make sense to provide a description and cost for each component when the heating systems will be replaced under a single project.

3.4 Reasoning for the Deficiency Categorization

DOCUMENT the reason for the deficiency categorization.

1. For modernizations, DOCUMENT the results of the decisions from the RN/DM and Modernization Decision Process Chart.
2. For RN and DM, DOCUMENT the results of the decisions from the RN/DM Sustainment Chart as well as the decisions from the RN/DM and Modernization Decision Process Chart.

Specific documentation of each result from the RN/DM and Modernization Decision Process Chart and the RN/DM Sustainment Chart is not required when the description of the deficiency has sufficient detail such that an individual unfamiliar with the deficiency can read the description and use this guidance document to arrive at the same categorization results. To assure that the description is adequate, it is recommended that relevant decision elements from the RN/DM and Modernization Decision Process Chart and the RN/DM Sustainment Chart be included in the description.

3.5 Cost Estimates

Cost estimates are the estimated budget necessary to resolve the RN, DM, or modernization.

3.5.1 Life cycle Forecasting Analysis Tools

Cost estimates that are automatically generated by RSMeans based life cycle analysis tools are usually inaccurate and unreliable. Cost estimating systems do not accommodate the unique SSCs and work control requirements frequently applicable to DOE-SC. Adjustment factors are

helpful, but it is a good practice to generate a rough order of magnitude estimate or a detailed cost estimate when feasible.

3.5.2 Shutdown and Standby Assets

The RN cost estimates associated with shutdown and standby assets are the costs to bring the asset back to its intended function or design condition. However, the DM costs can be related to maintaining the structure, compliance, health and safety, and security, and protecting the environment. The DM costs that are reported in FIMS are determined by management's acceptance of risk.

3.5.3 Escalation

The cost estimates are escalated annually to account for inflation.

3.6 Approval of Documentation

The documentation that provides the basis for which RNs, DM, and modernization are reported in FIMS should be approved by the people responsible for operation and maintenance of the asset and the responsible Level 1 or Level 2 manager.

3.7 Acceptance of Risk

The acceptance of risk is documented and the decision to accept the risk is made by a Level 1 or Level 2 manager who has a broad and wholistic understanding of the laboratory site.

3.8 Priority

There needs to be a system in place that documents the prioritization process for deficiencies reported as DM in FIMS.

3.9 Utilities

Utilities must be entered into the FIMS database in accordance with the definition of "property type" and the RN, DM, and modernization for each utility real property asset must also be recorded in the FIMS database.

4.0 DM Committee

The governance for the DM Committee is provided in this section.

4.1 Purpose

The purpose of the DM Committee is to steward this document and foster consistent DM reporting across all DOE-SC sites.

4.2 Membership

Every DOE-SC site will have at least one member on the DM Committee. Membership is not limited to people at DOE-SC sites and having more than one member per site is acceptable.

4.3 Meetings

Meetings via phone call will be held monthly.

4.4 Conformance and Implementation (DOE-SC Sites Only)

This document provides guidance, clarity, and consistency when categorizing RN, DM, and modernization.

4.4.1 Prior to DOE-SC Acceptance

Although it is not required for DOE-SC sites to follow this document, it is recommended to incorporate this guidance into their programs.

4.4.2 After DOE-SC Acceptance

All DOE-SC sites are to abide by this document. Assets will be evaluated and updated using this guidance document on the asset's normal five-year condition assessment survey cycle.

4.5 Training

DM Committee members will provide orientation training to practitioners. The training will go over how this document is used, why it was developed, and the categorization of RN, DM, and modernization relative to different situations.

5.0 References

DOE (U.S. Department of Energy). 2019. *Real Property Asset Management*. DOE O 430.1C, Washington, D.C.

DOE (U.S. Department of Energy). 2020. *Facilities Information Management System – FIMS User's Guide*. Washington, D.C. https://fims.doe.gov/fimsinfo/Documents/FIMS/user_gde.pdf.

Appendix A – Examples of Deficiency Categorizations

Included in this appendix are real-world examples of deficiencies requiring categorization as a repair need (RN), deferred maintenance (DM), or modernization, followed by associated categorizations (solutions) that include detailed explanations that provide the step-by-step logic and reasoning for the categorization. Working through the examples will promote discussion and help people better understand how to use this document. This appendix is intended to be a working document and the U.S. Department of Energy Office of Science (DOE-SC) DM Committee is encouraged to add more examples to document interpretations and enhance the clarity.

A.1 Fiber-Optic Utility Example

The underground 4" fiber-optic cable conduit connecting the ABC Building to the XYZ Building has been crushed. The 4" conduit needs to be dug up, repaired, and the fiber-optic cable needs to be repulled. The conduit contains six existing fiber-optic cables that are functioning, but the crushed conduit will not allow for any new cables to be pulled. There is a concern that the lifecycle of the fiber-optic cable has been shortened due to pressure on the cable from the crushed conduit. Of the six fiber-optic cables, four are currently being used and two are spares. The fiber-optic utility for the site is a DOE-owned mission critical other structure and facility (OSF). The conduit repair will take approximately two days and will cause the ABC Building to be without network capability. The new fiber-optic cable is already onsite. The project to repair the conduit is planning on replacing the six existing fiber-optic cables and pulling an additional six fiber optic cables. There are currently five full-time occupants in the ABC Building that can find alternate work locations, and the research in the ABC Building will not be affected by the network outage.

Categorization and Reasoning

Use the RN/DM and Modernization Decision Process Chart (Figure 1 in the main narrative).

- Potential Modernization: Yes, six additional fiber-optic cables are being added, which adds to the original capacity. See the bulleted items in Section 2.5.1.
- Is the Intent to Improve or Repair: The intent is to repair the crushed conduit. Even though six additional fiber-optic cables are being installed, the purpose of the project is to repair the conduit.
- Screen the finding in the RN/DM Sustainment Chart (Table 1).
  - Find "SSC Mission Impact" in the Definitions at the front of this document. The conduit most closely aligns with "Medium."
  - Find "easily achieved, low-cost solution within a reasonable amount of time" in the Definitions at the front of this document. This is a major repair with major impacts that is outside normal maintenance budget and therefore does not meet the definition.

  - Find "workaround exists" in the Definitions at the front of this document. Even though there are two spare fiber-optic cables there is only one conduit, making this a single point failure. However, since the existing cables inside the conduit are still functioning, a workaround does exist.
  - The conduit can no longer be used to bring in new fiber-optic cables and is potentially damaging the existing fiber-optic cables; therefore, the conduit has failed. (Find "failed" in the Definitions at the front of this document.)
  - The replacement section of conduit is an off-the-shelf item and therefore is not considered to be obsolete. The new fiber-optic cable is already onsite, the outage duration will have a minimal impact, and the duration of the outage is acceptable.
  - Using the RN/DM Sustainment Chart (Table 1), the deficiency is categorized as DM and can be found in row 6 and column I.
- The fiber-optic conduit is a DOE-owned real property asset.
- A Level 1 or Level 2 manager has not documented a decision to accept the risk and categorize the deficiency as a RN in the Facilities Information Management System (FIMS).

Solution: Categorize as DM.

A.2 Electrical Panel Example

Panel B is operating as designed and is in good working order. However, an arc flash study revealed that the short-circuit current for Panel B was approximately 18,000 amps, but the circuit breakers in Panel B only have a short-circuit current rating of 10,000 amps. A project to replace the circuit breakers with new ones that have a short-circuit current rating of 22,000 amps is scheduled to start in two years.

Categorization and Reasoning

Use the RN/DM and Modernization Decision Process Chart (Figure 1).

- Potential Modernization: Yes, the panel is being modified to meet the current codes and standards. See the bulleted items in Section 2.5.1.
- Is the Intent to Improve or Repair: The intent is to improve the electrical panel. Panel B is operating as designed and therefore does not need to be repaired. The reason the project was initiated was to upgrade Panel B to meet the current codes and standards.
- New or Changing Mission: The mission is not changing and the improvement will help facilitate the existing mission. See Section 2.5.3.
- The circuit breakers in Panel B are scheduled to be replaced in two years.

Solution: Categorize as Modernization

A.3 Roofing Example

A thermoplastic roofing system on a mission critical contractor-owned building is still within the optimum period but is approaching the end of its life. Every time there is a heavy rainfall, there are multiple leaks in the building. The leaks are always repaired, but new leaks continue to show up. The roof is scheduled to be replaced next year but to replace the roof, an access ladder must be temporarily removed. The access ladder meets the code of record but does not meet the current Occupational Safety and Health Administration requirements. The project manager made the decision to include the access ladder replacement in the thermoplastic roofing project because it did not make sense to reinstall the old access ladder.

Categorization and Reasoning

Use the RN/DM and Modernization Decision Process Chart (Figure 1).

- Potential Modernization: Yes, the access ladder is being replaced to meet the new codes and standards. See the bulleted items in Section 2.5.1.
- Is the Intent to Improve or Repair: The intent of the project is to repair the roof; however, the intent of the ladder replacement is to meet the current codes and standards. Therefore, the roof repair should be screened using the RN/DM Sustainment chart and the ladder replacement should be screened separately as a potential modernization.
- Screen the finding in the RN/DM Sustainment Chart (Table 1).
  - Find "SSC Mission Impact" in the Definitions at the front of this document. The roof most closely aligns with "High."
  - Find "easily achieved, low-cost solution within a reasonable amount of time" in the Definitions at the front of this document. This is a major repair that will have major impacts and is outside normal maintenance budget; therefore, it does not meet the definition.
  - Find "workaround exsits" in the Definitions at the front of this document. This roof has a workaround because if there is a leak in the roof, it does not prevent the facility from functioning normally.
  - Because the roof continues to have new leaks every time it rains, the system, structure, and component (SSC) requires extraordinary effort to remain in service. (The use of the RN/DM sustainment chart is subjective and requires judgment on the part of the assessor. In this example, the assessor could have decided that the roof is an SSC exhibiting signs of end of life but is still within the optimum period.)
  - The roofing system is not considered obsolete because repairs to the current roof can be made quickly and easily.
  - Using the RN/DM Sustainment Chart (Table 1), the deficiency is categorized as DM and can be found in row 9 and column G. However, if the assessor had considered the

condition of the SSC to only be nearing its end of life, the deficiency would be categorized as RN and found in row 10 and column E.

- The roof is contractor-owned and not a DOE-owned real property asset. Therefore, the deficiency is categorized as RN.

Solution: Categorize as RN.

A.4 Radiological Exhaust Example

A need has been identified to increase the radiological exhaust capability in the LMNOP Building. A project was initiated to add an additional exhaust fan to the roof and add 10 additional radiological fume hoods in the LMNOP Building. The project is included in the Annual Laboratory Plan but is not scheduled to start for six years.

Categorization and Reasoning

Use the RN/DM and Modernization Decision Process Chart (Figure 1).

- Potential Modernization: Yes, the new exhaust fan is adding capacity to the radiological exhaust system and the 10 new radiological fume hoods will add a new capability to the laboratory. See the bulleted items in Section 2.5.1.
- Is the Intent to Improve or Repair: The intent is to improve the radiological exhaust system in the LMNOP Building.
- New or Changing Mission: The mission is changing to require more work radiological fume hoods. See Section 2.5.3.
- The project is included in the Annual Laboratory Plan.
- The project is not scheduled to start within the next five years.

Solution: Not reportable in FIMS as RN, DM, or Modernization.

A.5 Main Circuit Breaker Example

A 4,000 amp main circuit breaker in a mission-critical laboratory is within the optimum period and is functioning normally. The circuit breaker is a single point failure and a replacement would require a full electrical outage in the building. A new circuit breaker costs $21,000 and has a lead time of four months. There is not a spare circuit breaker onsite.

Categorization and Reasoning

Use the RN/DM and Modernization Decision Process Chart (Figure 1).

- Potential Modernization: Yes, a purchasing a spare circuit breaker would reduce the operational risk. See the bulleted items in Section 2.5.1.

- Is the Intent to Improve or Repair: The intent of purchasing a spare circuit breaker is to have the circuit breaker available for a repair in the event of a failure. Because the circuit breaker is not being installed, it does not improve the system.
- Screen the finding in the RN/DM Sustainment Chart (Table 1).
  - Find "SSC Mission Impact" in the Definitions at the front of this document. The roof most closely aligns with "High."
  - Find "easily achieved, low-cost solution within a reasonable amount of time" in the Definitions at the front of this document. This is outside normal maintenance budget and therefore does not meet the definition.
  - Find "workaround available" in the Definitions at the front of this document. This circuit breaker represents a single point failure that cannot be mitigated before impacting the mission and operations.
  - The circuit breaker is functioning normally within the optimum period. Find "optimum period" in the Definitions at the front of this document.
  - The circuit breaker is not considered obsolete because a new one can be ordered but it does take four months to get a replacement circuit breaker. Not having power to the laboratory for four months is not acceptable. See the impact time is unacceptably long (ITUL) in the Definitions at the front of this document.
  - Using the RN/DM Sustainment Chart (Table 1), the deficiency is categorized as RN and can be found in row 9 and column B.
- The laboratory is a DOE-owned real property asset.
- A Level 1 or Level 2 manager has not documented a decision to accept the risk and categorize the deficiency as a RN in FIMS.

Solution: Categorize as RN.

A.6 Boiler Example

Engineering has determined that Boiler 2 in the QRS warehouse is beyond the optimum period. The boiler is old and replacement parts are almost impossible to find. The QRS Building is DOE-owned and is mission-dependent. There are two boilers in the building and the boiler system does not have N+1 redundancy. The warehouse is used to store filters and unused office furniture. The warehouse has a bathroom and two computer work stations that are used by teamsters. There is not a like-for-like replacement for the boiler. A new boiler with similar capacity has been identified, but to get the boiler into the mechanical room, a supply ventilation duct will have to be moved out of the way. The new boiler will also require the supply and return lines for the heating hot water piping to be relocated and the exhaust flue will need to be replaced.

Categorization and Reasoning

Use the RN/DM and Modernization Decision Process Chart (Figure 1).

- Potential Modernization: No, replacing a boiler that is beyond the optimum period with another boiler that is like in kind does not meet the criteria for a potential modernization. See the bulleted items in Section 2.5.1 and "optimum period" in the Definitions at the front of this document.
- Screen the finding in the RN/DM Sustainment Chart (Table 1).
  - Find "SSC Mission Impact" in the Definitions at the front of this document. The roof most closely matches a "Medium." It is important for the boiler to operate to prevent he pipes in the bathroom from freezing but the office furniture and filters do not need to be stored at a minimum temperature.
  - Find "easily achieved, low-cost solution within a reasonable amount of time" in the Definitions at the front of this document. This is a major repair involving removing and replacing a section of duct as well as rerouting heating hot water supply and return lines. Therefore, the boiler replacement does not meet this criterion.
  - Find "workaround available" in the Definitions at the front of this document. There is not N+1 boiler capacity or redundancy in the QRS warehouse making Boiler 2 a single point failure that cannot be mitigated before impacting the mission and operations.
  - The boiler is beyond the optimum period.
  - Because replacement parts are no longer commercially available and difficult to find, the boiler is considered to be obsolete.
  - Using the RN/DM Sustainment Chart (Table 1), the deficiency is categorized as DM and can be found in row 5 and column H.
- The laboratory is a DOE-owned real property asset.
- A Level 1 manager has documented a decision to accept the risk and categorize the deficiency as a RN in FIMS.

Solution: Categorize as RN.