**DOE-STD-1066 FAQs**

**Summary of Feedback Provided by the**

**EFCOG Fire Protection Task Team**

1. Feedback from other sites (as requested in email from Julie Cordero on 7/18/17) indicates that “**with value greater than**” is interpreted several different ways. Thus, an FAQ or Interpretation would provide consistency amongst the sites.
   1. 7.1.1.1 DOE O 420.1C (Attachment 2, Chapter II, Section 3.f (1)) requires FHAs to be prepared using a graded approach for (a) Hazard Category 1, 2, and 3 nuclear facilities and major modifications thereto; (b) facilities that represent unique fire safety risks; (c) new facilities, or modifications to existing facilities **with value greater than** $167 million (in 2016 dollars), and (d) when directed by the responsible DOE authority.

Comments:

Is the statement “with value greater than” the same as the MPFL?  Or is it simply the replacement value of the building and contents?

In some cases, the MPFL would be lower than the actual building value; however, there are also cases where the MPFL would be higher than just the building/contents values since the MPFL includes cleanup costs.

Notes from 7-26-17 EFCOG Fire Protection Task Team Meeting:

Per Jim Bisker, the value is the building value (i.e., RPV obtained from FIMS) plus the content value (e.g., PIDS, DOE Property Management Report, contractor-generated content value)

1. “**When required**” was dropped in the 2016 edition, Section 4.2.8.1.2. Section 4.2.8.1.2 is nearly a duplicate of what is contained in Section 4.2.8.1.1, except without the “**When required**” and buildings vs. facilities. As currently written in Section 4.2.8.1.2, every small building would require a fire alarm system even if NFPA 101 or IBC didn’t require it to have a fire alarm system.
   1. 2016 Version:
      1. 4.2.8.1.1 DOE O 420.1C requires a means to notify responders and building occupants in case of fire. As a minimum, a manual notification method, such as telephone, radio, or manual fire alarm boxes, shall be available for all facilities. **When required**, a fire alarm system shall be provided for DOE facilities to monitor fire suppression and detection systems, to notify occupants, to perform safety functions, and to notify emergency responders.
      2. 4.2.8.1.2 A fire alarm system shall be provided for DOE buildings to monitor fire suppression and detection systems, to notify occupants, to perform safety functions, and to notify emergency responders.
   2. 2012 Version
      1. 4.2.8 Fire Detection and Alarm Systems DOE O 420.1C requires a means to notify responders and building occupants in case of fire. As a minimum, a manual notification method, such as telephone, radio, or manual fire alarm boxes, shall be available for all facilities. **When required**, a fire alarm system shall be provided for DOE facilities to monitor fire suppression and detection systems, to notify occupants, to perform safety functions, and to notify emergency responders. NFPA 72, National Fire Alarm and Signaling Code, is the applicable NFPA standard for design, installation, and maintenance of fire detection and alarm systems.

Notes from 7-26-17 EFCOG Fire Protection Task Team Meeting:

Y-12 submitted a RevCom comment to retain the 2012 version “Where required” language. The comment was accepted, however, the change was not made.

1. Based upon the below code section, is this stating that for **enduring missions/facilities** that a **new** safety-related water supply shall be supplied even if it’s already provided with a code compliant safety-related water supply?  The second sentence in the code section is for enduring facilities which contradicts the applicability of Appendix A (new construction and major modifications to existing facilities).
   1. A.3.1.1.2 The long-term availability and reliability of water supply systems required to support a safety-related suppression system for an **enduring mission** shall be assessed. For enduring missions, a **new**, appropriately-designed, safety-related water supply system shall be provided.
   2. Appendix A: This appendix describes an acceptable approach for implementing the design and operational requirements specified in DOE O 420.1C, Facility Safety, for **new** safety significant (SS) and safety class (SC) fire protection systems, specifically, wet pipe automatic sprinklers, water supplies, and fire barrier systems. This appendix may also apply to situations where DOE decides to modify the safety basis for an existing nuclear Hazard Category 1, 2, or 3 nuclear facilities, such that an existing fire protection system is reclassified to perform a SC or SS function. **This appendix does not apply to existing fire protection systems that have already been classified as SS or SC in Hazard Category 1, 2, and 3 nuclear facilities**.

Notes from 7-26-17 EFCOG Fire Protection Task Team Meeting:

Per Jim Bisker, the Appendix A scope would allow for an existing water supply on a facility with an enduring mission to remain without a new water supply required.

1. **Fire Protection Design Analysis (FPDA)** is defined in section 1.4. Is the FPDA a process, a document, or both?  
     
   Proposed Answer: The FPDA is both a process and a document.  The FPDA is not just a collection of design reviews of individual drawings and specifications, but a more comprehensive review of the entire project that ensures all fire protection requirements have been properly addressed.  Section 4.1.1 indicates a need to establish a process to ensure that fire protection requirements are incorporated into the new designs. This is accomplished and documented by the FPDA, unless a PFHA is used instead, as indicated in Section 4.1.3?  Section 7.1.2 indicates the FPDA is a document that is reviewed and updated at certain points in a project.  The FPDA could be considered a mini-PFHA and cover essentially the same elements, but on a more graded approach?  Section B.5 further explains what is expected from the FPDA.
2. **Which Maximum Allowable Quantity (MAQ)** is dominant and how is it applied to existing buildings?   
     
   Proposed Answer (Note: not all sites agree on this proposed answer): Section 5.1.4.2 indicates that NFPA 1 and NFPA 400 are applicable.  Both contain MAQs that may differ from IBC.  Since IBC is not mentioned here as applicable, NFPA MAQs take precedence over those in IBC.  MAQs considered Operation requirements that would apply to existing buildings.  If an existing storage building was originally designed to an earlier standard, the facility will need to either reduce the quantities or change the design if the new MAQ is not met.  The MAQs have been refined significantly over the years by the standards writing committees and represent what is considered a safe level before additional controls are necessary.  If the MAQ must be exceeded, then the additional controls are necessary to protect the workers, the public or the environment.

Notes from 7-26-17 EFCOG Fire Protection Task Team Meeting:

Refer to current FAQ #2 which addresses Operational provisions (applicable to MAQs) and how they should be evaluated and implemented “to the extent practicable”. Thus, not requiring compliance with MAQs in newer code editions.

Additional comments:

Per the Order, IBC is applicable. The IBC references the IFC as part of the set of requirements. Thus, an FAQ answer that states the IBC MAQs are not applicable and that NFPA MAQs take precedence is in conflict with the Order.

* Order, CRD, 1.c: For design and construction activities, **contractors must identify the applicable industry codes and standards, including the International Building Code (IBC)**, and the applicable DOE requirements and technical standards. If approved by the responsible field element manager, state, regional, and local building codes may be used in lieu of the IBC upon contractor submission of a report that demonstrates that implementation of the substituted code for the specific application will meet or exceed the level of protection that would have been provided by the IBC. Additionally, DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, dated 11-29-10, requires nuclear projects to establish and maintain a Code of Record (COR) early in project design for identifying applicable industry codes and standards.
* Order, Chapter II. Fire Protection, 3.a(2): Codes and Standards. The **applicable building code and National Fire Protection Association (NFPA) codes and standards** must be identified in the fire protection and emergency response programs.

1. Facilities that have ceased operations and are now in or about to enter a **surveillance only mode**, pending a decision to go to **D&D** or full abandonment do not seem to fit what is described in Section F.1.  Can or should a **TFHA** be used for such facilities too?   
     
   Proposed Answer: A TFHA is needed any time a facility transitions from an operating facility to a non-operating facility.  If the transition is known to be permanent, the TFHA can replace the normally required FHA or it could simply reference the FHA and only address the issues resulting from the transition.  Even if a FHA is not normally required for the facility, a TFHA is recommended, not required, using a graded approach, because it can identify the conditions necessary before any reduction in fire safety features or programs can take place due to reductions in values, occupants, combustible materials or fire hazards.  If there is no further mission or use for the facility and they have begun official deactivation, the replacement value can be reduced to $0 for the building (plus remaining contents) even if the site replacement value does not show that reduction.  Under Section F.3.13, a building that has gone into D&D and reached cold and dark and previously had a sprinkler system, the TFHA could justify a non-maintained and drained sprinkler system that is left connected with a serviceable FDC and shut control valve and allows the fire Department to use it upon arrival like a manual system, but not require any routine maintenance or inspection.  A facility, locked against entry (except with an approved entry plan) can eliminate life safety features such as emergency lights, exit signs, fire extinguishers, etc,  The fire-preplan could be changed to a defensive posture only, if the internal hazards do not present a threat to the public, workers or the environment.
2. FAQ #1: **“onsite” contractor-leased facilities**.

The proposed response provides no value. Acknowledging the complexity of leased facilities and allowable graded-approach would be of more value. Including leases in the Order applicability section 3.a extends the requirements to all Chapters of the Order, not just Fire Protection. NPH, for example, does not have a graded approach section for leased facilities. Thus, a clarification/addition/FAQ at the Order level (i.e., “For leased facilities that are not nuclear hazard category 1, 2 or 3 facilities, the requirements apply to the extent determined by the field element”) would emphasize the DOE recognition of a graded-approach for all requirements in the Order. This would also mirror the language in Chapter II. Fire Protection.

1. Section 1.4.b ,makes reference to DOE O 420.1C, Change 1, but not Change 2.  I assume that is because it predates Change 2 being issued. but there is still no reference to DOE-STD-1066-2016 in Change 1, so there could be a disconnect unless the field office make the connection.
2. Section 1.5.  There is a good definition for Building now, but the term is rarely used.  Most of the requirements use the term Facility.  The definition for Facility still refers to nearly all things constructed.  However, there is a clarification made at the end that says "... most often refers to buildings and other structures ...".  This is confusing because it is not always clear which requirements really mean facility (I believe various programs would) and which refer to buildings ( I believe the threshold values and other design requirements would), but then you added the "and other structures" to the statement followed by "their functional systems and equipment and other fixed systems and equipment installed therein to delineate a facility".  The second part covers all the things you mentioned during the presentation and the words Other structures is unnecessary and may lead to confusion.  Personally, I would rather have seen each requirement refer to either Building or Facility, depending upon the extent you intended the requirement to apply.  This would avoid having to justify and submit Exemptions/Equivalencies for not installing sprinklers in large waste tanks, sand filters, burial grounds, saltstone vaults, etc., where you really never intended to install sprinklers, but state all Facilities over 5,000 sq ft. or $5 million in the order, Section 3.c.(2).  The Standard could have explained this better as to what the order actually expects.
3. Section 4 provides a fairly detailed set of requirements for new construction and significant modifications, including major modifications.  However, it is still a little unclear how to address existing buildings that were constructed under a Code of Record, where part of the CoR is based on an earlier order or S/RID (or similar contract).  If we discover a noncompliant condition to that existing building, there does not seem to be a means to obtain DOE approval to leave it as found.  For example, if an existing building is discovered to have violated some provision of the set of the CoR, lets say lack of sprinklers through out, we are unable to process an exemption or equivalency against an earlier and now archived DOE order or standard.  We have attempted to enter the process through the order, Section 3.a.(2)(a), which cites the use of the CoR and then cite the earlier order requirement, but the local office has objected to that approach.  How do we obtain approval to deviate from a requirement found in an now archived requirements document?  Section 4.2 of the Standard could clarify that more.
4. Section 4.2.4.2 says that for Fire Barriers, NFPA 221 is the applicable standard.  NFPA 221 defines Fire Barrier Walls, Fire Walls and High Challenge Fire Walls, just as the title implies.  Section 1.5 only includes a definition of a fire barrier and a fire wall.  NFPA defines Fire Barrier Wall as a wall, other than a fire wall, having a fire resistance rating.  I believe you intend for Fire Barrier to be the generic term for all fire rated walls (and floors or ceilings for that matter).  The definition for fire wall differs from what is defined in NFPA 221 and indicates some inconsistency, but I think it is close enough to avoid confusion.  Is the term Fire Barrier intended to be the generic term used for all types of walls with a fire resistance rating and not just as a Fire Barrier Wall as defined in NFPA 221?
5. Fire Protection Design Analysis is defined in section 1.4  It remains a little unclear if it is describing a process or a document or both.  I assume the FPDA is not just a collection of design reviews of individual drawings and specifications, but a more comprehensive review of the entire project that ensures all fire protection requirements have been properly addressed.  Section 4.1.1 indicates a need to establish a process to ensure that fire protection requirements are incorporated into the new designs.  Is this the FPDA previously described, unless a PFHA is used instead, as indicated in Section 4.1.3?  Can you provide a little more direction on what is expected by DOE-HQ for a FPDA.?  Section 7.1.2 appears to indicate the FPDA is a document that is reviewed and updated at certain points in a project.  Could the FPDA be considered a mini-PFHA and cover essentially the same elements, but on a more graded approach?  Section B.5 does shed some light on what is expected.  These different sections are scattered and not cross-referenced well.
6. Section 3.1.6 provides some detail about what is included with the FPP that is submitted for approval.  It also states that the supporting policies and procedures be submitted for information.  Is it the intent that  a reference to a retrievable document instead of the actual hard-copy would be sufficient?
7. Both the order and the standard are silent on the applicability of either Americans with Disabilities Act (ADA) or the Architectural Barriers Act (ABA) when discussing Life Safety in Section 4.2.6.  ADA specifically does not apply to Federal Facilities and ABA seems to have been adopted only by four Federal departments that do not include DOE.  Which, if any,  of these acts apply to DOE facilities and what is the process for deviating from them (e.g., where only able bodied persons would be permitted due to NIM alarms or contamination control, or similar business/safety reasons)?  I am only discussing the portions of those acts that pertain to Accessibility as used in NFPA 101 and IBC.
8. Section 4.4.2.2 requires oil filled windows to be protected with suppression systems, fire shutters or other physical protection means, as required by the FHA.  It leaves out the fire testing conducted by FM, where the window failed on the fire side and spilled oil into the interior, but still passed the barrier test.  If the FHA can show this to be an acceptable consequence, would that be an acceptable solution?
9. Section 1.4 defines Limited Supply Suppression System and has an example of the Vortex, a specific manufacturer's trade name.  New section 4.4.2.6 indicates that where no code is available that addresses a particular system, it must be approved by the AHJ.  Since the Vortex is one such system, is it considered approved already or does it need to go through a specific approval process?
10. Table 5.1 indicates that DOE O 420.1C Exemptions and Equivalencies must be approved by the Program Secretarial Officer, but DOE O 251.1D, App E indicates it is approved by the Head of the Departmental Element.  Is this the same person?  If not, which one must approve these?  If so, why use different terms?  Also, 10CFR851.30 and .32 indicate the Variance must be concurred by the Assistant Secretary of Environment, Safety and Health (which cannot be delegated) and the Table 5.1 says Office of Environment, Health, Safety and Security (AU).  Are these the same persons?  If so, why the differences?
11. It is a little unclear when Appendix A is mandatory.  The attachment does not really say, except that it is not applicable to existing facilities with systems determined to be SC/SS.  Section 4.2.7.1.1 says to refer to the Appendix for redundant water supplies and Section 4.2.7 says the Appendix provides further information to new SC/SS fire protection systems.  Section 4.2.4 does not even mention the Appendix as it pertains to fire barriers.  Section 4.4.1.4 also refers to the Appendix for further information applicable to new SS/SC fire protection systems.
12. Appendix E, Section E.1 and E.2 indicate that only the FPEs that serve as a program manager can be considered a Lead Fire Protection Engineer and Lead FPEs are responsible for key fire protection reviews and approvals.  However, the body of the standard makes no such distinction as to when a review or approval must be by a Lead FPE.  Also, can non-program managers serve the role of a Lead FPE if meeting the criteria?  All the responsibilities listed under  Section E.2 would leave little time to do any program managing.