



Jim Niehoff
Engineering
Facilities Engineering Services Section
630.840.3856 (phone)
630.840.4890 (fax)
niehoff@fnal.gov

07 July 2014

Mr. Rick Glenn, PE
AON Fire Protection Engineering Corporation
4 Overlook Point
Lincolnshire, Illinois 60069

Re: **MC Beamline Enclosure
Construction Drawing Review (Responses)
Review Letter dated May 9, 2014
FESS/Engineering Project No. 6-10-22**

Dear Mr. Glenn:

On May 9, 2014, AON Fire Protection Engineering submitted a review letter to the subject project. This letter will confirm Fermilab's responses to AON's review items. The response numbers correlate with AON's review letter.

1. Sheet G-1
 - a. Concur, will be revised.
 - b. Concur, will be revised.
 - c. Concur, will be revised.

2. Sheet FA-1
 - a. Concur, will be addressed.
 - b. Concur, will be corrected.
 - c. Concur, will be corrected.

3. Sheet FA-2
 - a. Concur, will be corrected.

Should you have any questions or comments, please do not hesitate to call or email me.

Sincerely,

Jim Niehoff

cc: T. Lackowski, Fermilab
Project File

S. Dixon, Fermilab
Attachement



May 9, 2014

Via Email
niehoff@fnal.gov

Mr. James Niehoff
Fermi National Accelerator Laboratory
P.O. Box 500, MS 214
Batavia, IL 60510

Re: MC Beamline Enclosures
Batavia, Illinois
Fire Protection/Life Safety Review
Aon FPE Project No. 1813065-000

Dear Jim:

Aon Fire Protection Engineering (Aon FPE) has reviewed the Construction Drawings dated March 3, 2014 for the referenced project for compliance with the applicable fire protection/life safety requirements of the *2009 International Building Code (IBC)*, the *2009 Life Safety Code*, NFPA 101, and for compliance with the *Mu2e Fire Protection/Life Safety Assessment* dated June 12, 2013. The construction drawings were received at our office on May 1, 2014.

This review is based on the assumption that the quantities of hazardous materials in this facility will not exceed the quantities listed in IBC Tables 307.1(1) and 307.1(2).

The following items were noted from our review of the received documents:

1. Sheet G-3:
 - a. Under Project Data, indicate the actual building height in stories and feet.
 - b. Under Project Data, indicate the actual building area.
 - c. Under Project Data, the construction type is incorrectly indicated as Type IIB. Indicate the actual construction type for the facility.
2. Sheet FA-1:
 - a. The strobe devices shown in the exit stairway in Fire Alarm Plan 3 are not required and can be deleted.
 - b. Fire Alarm Plan 3 references Detail 4 on Sheet FA-2. No such detail is provided.
 - c. The manual pull station shown in Fire Alarm Plan 2 near the matchline should be relocated in the tunnel to the west such that the pull station is located no more than 400 feet from the pull station at Mu2e. [IBC 907.4.2.1]
3. Sheet FA-2: The edition referenced for NFPA 72 in Fire Alarm General Note 3 should be updated to the current edition (2013).

The preceding review comments are limited to the information shown on the construction drawings. This review is not intended to imply, guarantee, assure, or warrant in any way that the construction will be in compliance with the provisions of any federal, state, or local codes, laws, or regulations for life safety or accessibility issues. Additionally, this review does not imply in any way that compliance with comments or recommendations stated in this review letter will eliminate all hazards, accidents, or areas of deficiency. Compliance with comments stated in this letter does not relieve the Architect/Engineer from complying with all applicable codes and standards, and local, state, and federal requirements.

Submitted by:

Aon Fire Protection Engineering Corporation



Rick Glenn, P.E.
Project Manager

DIRECT: 847.442.6371
EMAIL: rick.glenn@aon.com

rg:

07 July 2014

Mr. Rick Glenn, PE
AON Fire Protection Engineering Corporation
4 Overlook Point
Lincolnshire, Illinois 60069

Re: **Mu2e Conventional Facilities
Construction Drawing Review (Responses)
Review Letter dated May 9, 2014
FESS/Engineering Project No. 6-10-2**

Dear Mr. Glenn:

On May 13, 2014, AON Fire Protection Engineering submitted a review letter to the subject project. This letter will confirm Fermilab's responses to AON's review items. The response numbers correlate with AON's review letter.

1. Sheet G-3
 - a. Concur; this is addressed in the Architectural/Engineering's code analysis report.
 - b. Concur; this is addressed in the Architectural/Engineering's code analysis report.
2. Sheet A-3: Concur, will be revised.
3. Sheet M-3: Concur, section view 5 on drawing M-9 has been clarified to indicate supply duct inn separate shaft and is not in the stairwell.
4. Sheet M-5: Concur, will revise to include fire damper.
5. Sheet M-20: Disagree, this unit is a designated supply fan in case of a cryogenic gas leak creating an oxygen deficient hazard (ODH). This unit only operates in an emergency situation and is connected to local and remote alarms, alerting the occupants to evacuate the building and dispatching the fire department. AHU-3 will be provided with a duct smoke detector.
6. Sheet FP-2: Concur, will be revised.
7. Sheet E-14: Concur, will be addressed.
8. Elevator: Concur, will be addressed in technical specifications.

9. Electrical: Standby power is provided for the ODH supply fan.

10. Sheet FA-2:

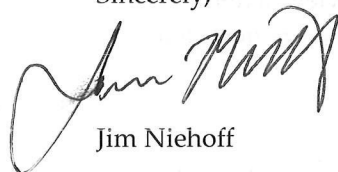
- a. Concur, will be revised.
- b. Concur, will be revised.
- c. Concur, will be revised.
- d. Concur, will be revised.
- e. Concur, will be revised.
- f. Concur, will be addressed.

11. Sheet FA-3:

- a. Concur, will be revised.
- b. Concur, will be revised.
- c. Concur, will be revised.
- d. Concur, will be revised.

Should you have any questions or comments, please do not hesitate to call or email me.

Sincerely,



Jim Niehoff

cc: T. Lackowski, Fermilab
Project File

S. Dixon, Fermilab
Attachment



May 13, 2014

Via Email
niehoff@fnal.gov

Mr. James Niehoff
Fermi National Accelerator Laboratory
P.O. Box 500, MS 214
Batavia, IL 60510

Re: Mu2e Conventional Facilities
Batavia, Illinois
Fire Protection/Life Safety Review
Aon FPE Project No. 1813065-000

Dear Jim:

Aon Fire Protection Engineering (Aon FPE) has reviewed the Construction Drawings dated February 17, 2014 for the referenced project for compliance with the applicable fire protection/life safety requirements of the *2009 International Building Code (IBC)*, the *2009 Life Safety Code*, NFPA 101, and for compliance with the *mu2e Fire Protection/Life Safety Assessment* dated June 12, 2013. The construction drawings were received at our office on May 1, 2014.

This review is based on the assumption that the quantities of hazardous materials in this facility will not exceed the quantities listed in IBC Tables 307.1(1) and 307.1(2).

The following items were noted from our review of the received documents:

1. Sheet G-3:
 - a. Under Project Data, indicate the actual building height in stories and feet.
 - b. Under Project Data, indicate the actual building area.
2. Sheet A-3: Door 114B is not permitted to open into Stair #2 unless Solenoid & Power Supply Room 115 will be a normally occupied space. [IBC 1022.4]
3. Sheet M-3: A supply air duct to serve Transport Solenoid Area 013 is shown routed through exit stairway 012. Only ducts serving the exit stair enclosure are permitted within the enclosure. [IBC 1022.5]
4. Sheet M-5: A supply air duct terminating at a wall register is shown in the west wall of Mechanical Room 111, which is a 1 hr. fire rated partition. A fire damper is required at this duct penetration. [IBC 717.5.4]
5. Sheet M-20: Duct smoke detectors are not shown on the supply sides of ODH-MUA-1 and AHU-3. Duct smoke detectors are required on the supply sides of these units. [NFPA 90A, 6.4.2.1]
6. Sheet FP-2: Revise Preaction Sprinkler System Note 9 to read "All exposed wet-pipe system piping shall be painted red" and relocate this note to Sheet FP-1.
7. Sheet E-14: Verify that emergency lighting will be provided within Exit Passage 017. [IBC 1006.3]
8. Electrical: Verify that emergency power will be provided for the elevator car lighting. [FP/LS Assessment Report]
9. Electrical: Verify that standby power will be provided for all ventilation systems serving the Lower Level. [FP/LS Assessment Report]

10. Sheet FA-2:
- a. Provide manual pull stations at both entrances to Exit Passage 017. [IBC 907.4.2.1]
 - b. Relocate the manual pull station shown near the east entrance to Stair #4 to within 5 feet of the stair door. [IBC 907.4.2.1]
 - c. Relocate the manual pull station shown in Stair 012 to outside the stair at the stair door. [IBC 907.4.2.1]
 - d. Provide a speaker and strobe device within Exit Passage 018. [IBC 907.5.2.1.1]
 - e. Provide a speaker within Stair 012. [IBC 907.5.2.1.1]
 - f. The plan references an air sampling point detail on Sheet FP-4. No such detail is provided.
11. Sheet FA-3:
- a. The editions referenced for NFPA 70 and NFPA 72 in Fire Alarm System Notes 4 and 5 should be updated to the current editions (2011 and 2013, respectively).
 - b. In Fire Alarm System Note 10, change reference to "ASME/ANSI A17.1".
 - c. In the Fire Alarm System Matrix, clarify why "Air Sampling Enclosure" constitutes a fire alarm condition.
 - d. Detail Interfaces 1, 2, and 3 are not referenced on Sheet FA-1.

The preceding review comments are limited to the information shown on the construction drawings. This review is not intended to imply, guarantee, assure, or warrant in any way that the construction will be in compliance with the provisions of any federal, state, or local codes, laws, or regulations for life safety or accessibility issues. Additionally, this review does not imply in any way that compliance with comments or recommendations stated in this review letter will eliminate all hazards, accidents, or areas of deficiency. Compliance with comments stated in this letter does not relieve the Architect/Engineer from complying with all applicable codes and standards, and local, state, and federal requirements.

Submitted by:

Aon Fire Protection Engineering Corporation



Rick Glenn, P.E.
Project Manager

DIRECT: 847.442.6371
EMAIL: rick.glenn@aon.com

rg: (r/kc)