Owner / Applicant Information

John Girzadas
B. Coleman Aviation, LLC
5701 West Industrial Highway

Gary IN 46406

Phone 3129077894

Email jgirzadas@b-coleman.com

Submitter Information

James Keilman
R. Keilman Associates, Inc.
111 1/2 West Joliet Street

Crown Point IN

Phone 2196620580

Email rktects@sbcglobal.net

Designer Information

James Keilman
R. Keilman Associates, Inc.
111-1/2 West Joliet Street

Crown Point IN

Phone 2196620580

Email rktects@sbcglobal.net

Project Information

New Hangar for B. Coleman Aviation
5701 West Industrial Highway

Gary IN 46406

County LAKE

Project Type New [Y] Addition [ ] Alteration [ ] Existing [ ] Change of Occupancy [ ]

Project Status [F] F=Filed U or Null=Unfiled

IDHS Issued Correction order? [No] Has Violation been Issued? [No]

Violation Issued by: NA

Local Building Official

Phone: [2198811377] Email: [fhawkins@ci.gary.in.us]

Local Fire Official

Phone: [2198811377] Email: [pbradley@ci.gary.in.us]

Variance Details

Code Name: 2009 IN Elect Code

513.3(D)

Conditions: The B. Coleman Aviation Hangar is an existing aircraft storage hangar located within the Gary-Chicago International
Airport. The building is a 39,852 square foot free-standing pre-engineered metal building. The building is fully fire sprinklered.
Due to circumstances that required a change in classification of the hangar building to a Class I, Division 2 hazardous location, the existing electrical switchgear will need to be enclosed with partitions and "Suitable Cut Off" in
accordance with Article 513.3(D).
The enclosure for the electrical gear will be installed around the existing service panels and service raceway - portions of which are located within the Classified Area between the floor and 18" above the floor as defined in Article
513.3(B). The enclosure will have 8' high walls and will have a sealed doorway with a closer. The enclosure will provide a suitable means of cutting off the electrical room from the Classified area in the hangar. The LBO is requiring the enclosure to have a sealed ceiling or cap to fully enclose the electrical room. Since everything within the hangar facility that is above a line 18" above the floor is NOT considered Classified as defined in Article 513.3(B), the area up at the level of the ceiling cap would be well outside the Classified area. A ceiling cap above the partitions would
therefore offer no additional protection. In addition, Article 513.3(D) - Areas Suitably Cut Off and Ventilated - states
that "Adjacent areas in which flammable liquids or vapors are not likely to be released, such as stock rooms, electrical control rooms, and other similar locations, shall be unclassified where adequately ventilated and where effectively cut
off from the hangar itself by walls or partitions".

DEMONSTRATION THAT PUBLIC HEALTH, SAFETY, AND WELFARE ARE PROTECTED:

1=Non-compliance with the rule will not be adverse to the public health, safety or w

[1]

2= Applicant will undertake alternative actions in lieu of compliance with the rule to ensure that granting of the variance will not be adverse to public health, safety, or welfare. Explain why alternative actions would be adequate (be specific).

Facts: Omitting the ceiling of the proposed electrical room enclosure will not be adverse to the public health, safety, or welfare. The enclosure walls will be installed around the existing service panels and service raceway - portions of which are located within the Classified Area between the floor and 18" above the floor as defined in Article 513.3(B). The enclosure will have 8' high walls and will have an environmentally sealed doorway with a closer. The enclosure will provide a suitable means of cutting off the electrical room from the Classified area in the hangar and will protect the electrical gear from any flammable or combustible vapors as required by Code.

DEMONSTRATION OF UNDUE HARDSHIP OR HISTORICALLY SIGNIFICANT STRUCTURE:

[Y] Imposition of the rule would result in an undue hardship (unusual difficulty) because of physical limitations of the construction site or its utility services.

[ ] Imposition of the rule would result in an undue hardship (unusual difficulty) because of major operational problems in the use of the building or structure.

[Y] Imposition of the rule would result in an undue hardship (unusual difficulty) because of excessive costs of additional or altered construction elements.

[ ] Imposition of the rule would prevent the preservation of an architecturally or a historically significant part of the building or structure

Facts: The electrical room enclosure is currently planned as three new walls closing to the existing exterior wall of the hangar (see attached diagrams). It is currently sized so as to provide the minimum required work clearance to the electrical gear as required by Article 110.26(A)(1).

The electrical room contains the 400A main distribution panel, a 25kva step-down transformer, two 42 circuit sub-panels, a lighting control panel, and a fire alarm control panel. It is approximately 4' x 25'x 8' high. If we install the ceiling cap as the LBO desires, we would need to provide mechanical ventilation of the room, lighting for the room, and extend sprinkler head(s) to the room from the existing sprinkler system. In addition, the ceiling cap construction would require special support along the existing exterior wall that would be difficult to install. The cost for the ceiling cap and related work as indicated above would be in excess of $10,000.00

Variance Details

Code Name: 2009 IN Elect Code

501.10(B)(1)(2)

Conditions: The B. Coleman Aviation Hangar is an existing aircraft storage hangar located within the Gary-Chicago International Airport. The building is a 39,852 square foot free-standing pre-engineered metal building. The building is fully fire sprinklered.
The facility was originally designed for jet fueled aircraft storage and was not required to be classified as a "Hazardous Location" per Article 513.1 of the 2008 NEC. Jet fuel has a relatively high flash point and does not require a hazardous classification. The construction of the facility has been substantially completed and ready for occupancy. The owner has now indicated a desire to store prop aircraft within the hangar as well as jet aircraft. Article 513.1 of the 2008 NEC defines the scope of hazardous locations and classifies aircraft containing AV-gas (Aviation Gasoline) as a Class I, Division 2 location up to and including 18" above the floor surface. Anything above 18" is considered unclassified per Article 513.3(B). Article 501.10(B)(1)(2) requires all conduit within the classified location to be threaded rigid metal conduit, or threaded steel intermediate metal conduit. The conduit that was installed in the classified area between the threaded rigid metal conduit that is stubbed up out of the floor slab and the metal enclosure boxes that are above the 18" classified area,(See attached diagram and photos) was type "EMT" metal conduit. This conduit is not threaded but is connected with metal set-screw connectors to the threaded metal conduit stubs at the floor. The variance requested is to allow the use of the existing non-threaded conduit in lieu of the heavier threaded metal conduit as required by Article 501.10(B)(1)(2).

DEMONSTRATION THAT PUBLIC HEALTH, SAFETY, AND WELFARE ARE PROTECTED:

1=Non-compliance with the rule will not be adverse to the public health, safety or w

[2]

2= Applicant will undertake alternative actions in lieu of compliance with the rule to ensure that granting of the variance will not be adverse to public health, safety, or welfare. Explain why alternative actions would be adequate (be specific).

Facts: Applicant has undertaken alternative actions in lieu of compliance to ensure public health, safety, and welfare. These include installing a means of sealing the inside of the EMT conduits prior to them entering the metal enclosure boxes or appliances above the classified area in substantial compliance with Article 501.15(C) (see attached spec sheet for means of sealing the conduits). In addition, the set-screw fittings within the classified area that connect the threaded rigid metal conduit stubbed up out of the floor slab to the EMT conduit will be sealed with chemical-resistant caulking at the set screw fitting-to-conduit connection.(see attached diagram and photos) This will provide an additional means of sealing the conduit and prevent any flammable gases from migrating into the conduit near the floor.

DEMONSTRATION OF UNDUE HARDSHIP OR HISTORICALLY SIGNIFICANT STRUCTURE:

[Y] Imposition of the rule would result in an undue hardship (unusual difficulty) because of physical limitations of the construction site or its utility services.

[ ] Imposition of the rule would result in an undue hardship (unusual difficulty) because of major operational problems in the use of the building or structure.

[Y] Imposition of the rule would result in an undue hardship (unusual difficulty) because of excessive costs of additional or altered construction elements.

[ ] Imposition of the rule would prevent the preservation of an architecturally or a historically significant part of the building or structure

Facts: The facility is substantially complete and ready for occupancy. The LBO had verbally notified the Contractor and the Owner that in order to accommodate Av-Gas powered propeller aircraft

the facility would need to have the existing conduit and wiring removed from a total of 66 runs. New threaded steel conduit would need to be installed and the appliances re-wired with seals per code. The cost of this work would be in excess of $27,000.00 and would take over four weeks to complete. The Owner has existing leases with tenants to store jet aircraft within the facility within the next week and wishes to seek the variance. The AHJ is allowing the facility to be used for jet powered aircraft only during the variance request period so they may accommodate their clients.