

OFFICE OF ENGINEERING SERVICES, REGION X  
CODES & INTERPRETATIONS COMMITTEE  
REVIEW SUMMARY

**REFERENCE:** Stephen Christopher, Area Mechanical Engineer, Alaska Native Health Service, Letter dated 8/20/96.

**ISSUE:** Request for an interpretation of the severity of a life safety hazard created by interior partitions with combustible wood studs {NFPA 101, 13-1.6.3}.

**LOCATION:** Mt. Edgecumbe IHS Hospital, Sitka, AK

**BACKGROUND:** The Mt. Edgecumbe IHS Hospital, has a five-story inpatient tower with a full basement and an adjacent two-story outpatient facility. The building is fully sprinklered, has fire alarms throughout, and smoke detectors in all corridors. The building structure is concrete exterior bearing walls, concrete beams and columns, and concrete floor and roof slabs. The exterior walls are finished with insulation and dryvit on the exterior and wood furring, metal lathe and plaster on the interior. The building meets the general classification of a Type II {222} building under NFPA 220. However, the interior non-load bearing partitions, except for recent alterations, are constructed of combustible wood studs which are not allowed in Type II buildings under health care occupancy {NFPA 101, 13-1.6.3}. In July 1996, the Mt. Edgecumbe facility manager, Dennis Heller, requested an interpretation from the National Fire Protection Association {NFPA} whether the existing combustible interior walls and partitions were in violation of 13-1.6.3, and if so, did they have to be removed to bring the facility into compliance. George Harrington from NFPA responded that while NFPA would not provide a formal interpretation, it was his opinion that the facility was not in compliance with NFPA 101. He further stated that the facility should consult with the appropriate Authority Having Jurisdiction {AHJ} to coordinate any plans to bring the facility in compliance. Mr. Harrington's response also made reference to NFPA 101, 1-6.1 for occupancy of buildings not in compliance. This citation specifically states an existing building not in compliance shall not be occupied in whole or part unless 1) a plan of correction has been approved, 2) the occupancy classification remains the same, and 3) no serious life safety hazard exists. Mr. Heller then forwarded a request for interpretation of the severity of the specified life safety hazard to the Alaska Native Health Service, who in turn forwarded the request to Engineering Services-Seattle. A preliminary review by our committee concurred with Mr. Harrington's opinion in a letter dated August 23, 1996. We recommended that a thorough review of the facility be completed including consideration of alternative approaches to life safety under the Fire Safety Evaluation System {FSES} {NFPA 101 A}. We issued a draft FSES review on October 23, 1996, based on information provided by the facility. On November 14-15, 1996, we completed an on-site survey. During that survey we verified the assumptions in the initial review and surveyed the existing conditions at the facility. The facility is very well maintained, and facility staff are clearly interested in implementing strategic planning appropriate for the services provided.

DISCUSSION: Review of the existing floor plans and space utilizations; the latest JCAHO Statement of Conditions; fire alarm, detector, and sprinkler systems plans; building construction details; and the on-site survey resulted in the facility being divided into ten separate zones and occupancies for evaluation as noted below.

	FLOOR	OCCUPANCY	FSES WORKSHEET
ZONE 1	4 North/South	Administration	Business
ZONE 2	3 South	Inpatient – CDU	Health Care
ZONE 3	3 North	Inpatient – Mental Health	Health Care
ZONE 4	2 South	Inpatient – Surgery	Health Care
ZONE 5	2 North	Inpatient – ACU/CCU	Health Care
ZONE 6	1 North	Inpatient – OB/GYN	Health Care
ZONE 7	1 South	Inpatient Treatment	Health Care
ZONE 8	1 East	Outpatient	Business
ZONE 9	Ground	Outpatient	Business
ZONE 10	Basement	Support Services	Business

Because the facility was constructed prior to adoption of the IHS policy requiring facilities over 10,000 sf to meet the requirements of an Ambulatory Health Care occupancy, we choose to treat the outpatient areas as business occupancy.

All zones classified as business occupancy currently meet an equivalent level of fire safety under FSES to that prescribed in NFPA 101, Life Safety Code.

All zones classified as health care occupancy currently do not meet an equivalent level of fire safety under FSES to that prescribed in NFPA 101, Life Safety Code.

The major deficiency that prevents the entire facility from meeting an equivalent level of fire safety is the gravity exhaust system with no fire or smoke dampers at each floor or opening. This gravity exhaust system is comprised of 14 vertical chases, 12 of which are open for 4 or more floors, which would act as chimneys in the event of a fire. Several have clearly been abandoned in place and are no longer required.

In addition to the above, the following additional deficiencies were identified that require correction prior to the entire facility meeting an equivalent level of fire safety:

Zone 4, Telephone Room 236, louvers in door are not allowed. Throughout the inpatient tower, walls above the ceiling between the original patient bathrooms and steam soffits have been partially demolished exposing unprotected wood frame construction.

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**INTERPRETATION:** Currently the facility does not meet an equivalent level of fire safety under FSES to that prescribed by NFPA 101, Life Safety Code. The gravity exhaust system, creating the potential for rapid spread of a fire vertically, combined with the high fuel combustibility of wood framing in interior partitions particularly where exposed creates a serious life safety hazard. It is our recommendation that the facility immediately develop and implement a plan of correction to address the deficiencies cited above. We are available to assist the facility in defining appropriate correction actions. Correction of these deficiencies will allow the facility to meet an equivalent level of fire safety to that prescribed NFPA 101, Life Safety Code without replacing interior partitions.

Upon correction of the deficiencies, no further action regarding wood stud framing in interior partitions is required. However, it is our recommendation that the facility continue its policy to utilize metal framing in all future alterations to the facility.

At the request of the facility, the long range master plan was also reviewed to assess if proposed departmental changes would impact our interpretation. Based on the information provided at this time, the facility master plan does not impact the interpretation contained herein.

**SIGNATURES:**

<input checked="" type="checkbox"/> Concur	<input type="checkbox"/> Do Not Concur	DATE: 1-17-97	/Diane Stewart Adams/ NAME: Diane Stewart Adams, AIA, WA #0004056
<input checked="" type="checkbox"/> Concur	<input type="checkbox"/> Do Not Concur	DATE: 1-17-97	/Steven C. Christensen/ NAME: Steven C. Christensen, P.E., WA #0017104
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<input checked="" type="checkbox"/> Concur	<input type="checkbox"/> Do Not Concur	DATE: 1-17-97	/James L. Crawford/ NAME: James L. Crawford, Sr. P.E., WA #0021414
<input checked="" type="checkbox"/> Concur	<input type="checkbox"/> Do Not Concur	DATE: 1-23-97	/S/ NAME: Engineering Services - Dallas