



July 29, 2015

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Notice of Work Complete
151 Sand Hill Rd.
South Windsor, CT 06074
Sprint Site #: NV2.5_CT33XC555
EM-SPRINT-132-140124

Members of the Siting Council:

On behalf of Sprint Spectrum, SBA Communications is hereby notifying the Connecticut Siting Council that work has been completed at the aforementioned telecommunications facility.

Pursuant to the Council's letter of acknowledgement dated February 14, 2014, please find the enclosed Final Report of Special Inspections confirming that the installation meets with the recommendations made in the structural analysis report.

Thank you,

A handwritten signature in blue ink, appearing to read "Kri Pelletier".

Kri Pelletier
Property Specialist
SBA Communications Corporation
33 Boston Post Road West, Suite 320
Marlborough, MA 01752
508-251-0720 x 3804 + T
508-251-1755 + F
kpelletier@sbsite.com

Final Report of Special Inspections

Project: Sprint 2.5 Equipment Installation (Sprint Site No. CT33XC555)

Location: 151 Sand Hill Road
South Windsor, CT 06074

Owner: Property: Town of South Windsor
Tower: SBA
Carrier: Sprint Corporation

Owner's Address: Property: 1540 Sullivan Avenue
South Windsor, CT 06074

SBA: 5900 Broken Sound Parkway, NW
Boca Raton, FL 33487-2797

Sprint: 1 International BLVD, Suite 800
Mahwah, NJ 07495

Architect of Record: N/A

Structural Engineer of Record: Marc R. Chretien

To the best of my information, knowledge, and belief, the Special Inspections required for this project, and itemized in the Statement of Special Inspections submitted for permit, have been performed and all discovered discrepancies have been reported and resolved other than the following:

Comments:

None

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully Submitted,
Special Inspector

Marc R. Chretien

(Type or print name)



Signature

7/27/15

Date





STATE OF CONNECTICUT
 Department of Administrative Services
 Division of Construction Services
Office of State Fire Marshal

MODIFICATION REQUEST # FM-0423-14

PROJECT NAME: SOUTH WINDSOR (SBA/SPRINT SITE CT33XC555)

ADDRESS: 151 SAND HILL ROAD

TOWN: SOUTH WINDSOR

STATE FIRE MARSHAL

In accordance with Section 29-338 of the Connecticut General Statutes, the decision of the Office of the State Fire Marshal in this matter is:

This modification request that seeks relief from the Connecticut Hazardous Chemicals Code effective January 24, 1997 specifically NFPA 50A/1994 Section 4-1.2 which requires electrical equipment within 15 feet of hydrogen cylinders located outdoors be in accordance with Article 501 of NFPA 70 for Class I, Division 2 Locations.

With consideration of the conditions that exist with respect to the location of the Reli-On HSM16 fuel cabinet containing 16-510 SCF hydrogen cylinders, totaling 8160 SCF, is installed within the Class I, Division 2 location of the electrical equipment, the proposal to install and 2 hour rated constructed CMU wall between the HSM16 Fuel Cabinet and the electrical equipment, this request is being APPROVED without the installation of the CMU wall. It is of our opinion that the properties of hydrogen allow for rapid dispersion and would not be a hazard in this type of installation.

Evaluated by JPD

Reviewed by:

Joseph Kingston

 Joseph. Kingston

Decision endorsed by:

William Abbott

 William Abbott
 State Fire Marshal

Date: February 9, 2015

"In accordance with Connecticut General Statute 29-340, any person aggrieved by any such regulation or act of said commissioner in enforcing the same may apply for relief to the superior court for the judicial district of Hartford or for the judicial district in which such plant or equipment is located or, if said court is not in session, to any judge thereof, who may grant appropriate relief."

State of Connecticut, Department of Public Safety
Division of Fire, Emergency & Building Services
Office of State Fire Marshal

APPLICATION FOR REQUEST FOR MODIFICATION OF A REQUIREMENT OF A FIRE SAFETY REGULATION
ADOPTED PURSUANT TO CHAPTER 541 OF THE CONNECTICUT GENERAL STATUTES

Reference No. _____

Facility Name: South Windsor (SBA/Sprint Site CT33XC555)

Facility Address: 151 Sand Hill Road, South Windsor, CT 06074

Facility Owner: SBA Towers II, LLC Telephone: 561-226-9523

Owner's Address: 5900 Broken Sound Parkway NW, Boca Raton, FL 33487

Applicant's Name: Hudson Design Group Telephone: 978-557-5553

Applicant's Address: 1600 Osgood Landing, Bldg 20N, Suite 3090, North Andover, MA 01845

Contact Person: Derek Creaser, PE Telephone: 617-306-3034

Type of Facility: Utility - Telecommunications Tower with Hydrogen Storage for backup generator

Office Building, LP-Gas Bulk Plant, Automotive Service Station, etc.

This Facility is: New; Existing; Renovation; Date of Construction: 2012; Date of Present Use: current

Previous modifications for this Facility: Unknown; No; Yes, Modification Numbers: _____

Check if a Modification Request to the State Building Code is being submitted to the Office of State Building Inspector.

FM-0423-14

I, the above named applicant, being a lawful agent of the owner, request modification/relief from a requirement of the CT:

- Moving Picture Theater Code pursuant to C.G.S. § 29-109
- Amusements/Tent and Portable Shelter Codes pursuant to C.G.S. § 29-140
- State Fire Safety Code pursuant to C.G.S. § 29-296
- Oil Burning Equipment Code pursuant to C.G.S. § 29-317(c)
- Flammable & Combustible Liquids Code pursuant to C.G.S. § 29-321
- Gas Equipment & Piping Code pursuant to C.G.S. § 29-329(c)
- Liquefied Petroleum Gas & Liquefied Natural Gas Code pursuant to C.G.S. § 29-333
- Hazardous Chemical Code pursuant to C.G.S. § 29-338
- Fireworks and Special Effects Code pursuant to C.G.S. § 29-357(c)
- Model Rocketry Code pursuant to C.G.S. § 29-368

For the requirement as prescribed in:

Regulation Number: 29-337 Standard: NFPA 50A Section Number: 3-2 & 4-1.2

29-292-Bd, 29-317-1b (If Applicable) NFPA 30, NFPA 34, etc Identify Section Number

I request this modification/relief due to the following reasons:

- Equivalent Alternative Practical Difficulty Requirements Unwarranted

Describe area of non-conformance with the appropriate regulation, its location in the facility, and a brief description why code compliance cannot be achieved, specify dimensions as applicable.

An existing Reli-On 8000 SCF Hydrogen storage module (HSM) at 3000 psi does not meet the setback requirements per NFPA 50A-94 Section 3-2.2 #11: 50' setback to inlets to HVAC; and Section 4-1.2: 15' setback to unclassified electrical equipment.

Reli-On cites NFPA 497 for further information on classified electrical equipment locations; and seems to claim that the area directly adjacent to the HSM is not a classified location: "Experience has shown that the release of ignitable mixtures from some operations and apparatus is so infrequent that the area classification is not necessary."

Separate Sheet Attached

FM-0423-14

I intend to provide the following safeguard(s) as an alternative measure to secure public safety in lieu of strict compliance with the requirement of the 29-337 Section NFPA 50A-94 Sections 3-2 & 4-1.2 noted above:
Insert Name of Regulation for which Modification/Relief is being Requested Identify section of Code/Regulation

Propose to install a 2 hour fire barrier in lieu of the 15' unclassified electrical setback, and reduce the 50' setback to 25' for HVAC noting that a 50' setback may be unwarranted as telecommunication shelters have a Hydrogen detection and alarm system that notifies the network operations center to call the fire department.

Separate Sheet Attached

In addition the following are enclosed

Plans/Drawings/Sketches;

Photographs;

Product Data Sheets

Supplement Information Sheet

Other _____
as necessary for clarification of the information provided.


Applicant's Signature & Telephone Number

11/17/14
Date

FOR LOCAL FIRE MARSHAL USE

I, Support, Do NOT Support, this Request for Modification to Connecticut _____
Identify Code by Name; i.e. Fire Safety Code, Oil Burning Equip Code

Regulation of Connecticut State Agency _____ Inclusive; as identified above to Section _____
Insert regulation Number i.e. 29-292-84, 29-317-3a, etc.

_____ because of the following reasons:
Identify code flow i.e. occupancy chapter, core chapter as applicable

Decision to be made by State Fire Marshal.

Separate Sheet Attached


Fire Marshal

Fire Marshal
Reviewer's Signature / Title

860-644-2511
Telephone Number

11/19/14
Date

Contact me regarding this Request

STATE FIRE MARSHAL

The response of the Commissioner of Public Safety/State Fire Marshal to this request in accordance with Connecticut General Statutes § 29-330 is attached on a separate sheet


Supervisor's Initials

**APPLICATION FOR REQUEST FOR MODIFICATION OF A REQUIREMENT OF A FIRE SAFETY REGULATION
SUPPLEMENT INFORMATION SHEET**

If Modification request is for a building or structure, please complete the following:

Date of Construction: _____ Date of Occupancy for Present Use: _____
 Number of Stories (Above grade) _____ Dimension / Area Per Floor: _____
 Attic: Full Partial None
 Basement - # of Levels: _____ Full Partial None
 Finished Storage Crawl Space

Type of Occupancy (Check all that apply) New Existing Addition Renovation of building
 Change of Occupancy: From _____ to _____
 Assembly Educational Business Mercantile
 Occupant Load: _____ persons with locking II with locking III with locking IV with locking V
 Detention Residential Board Apartment
 Single Tenant Multiple Tenant
 Class A Class B Class C Covered Mall
 Large Small Prompt Slow Impractical
 Health Care Hospital Nursing Home Ambulatory Limited
 Hotel/Motel/Dorm Lodging/Rooming Bed & Breakfast 1 & 2 Family Industrial
 Storage High Rise Underground Windowless Other: _____
 No. of Units: _____ Day Care Adult Family Group

Type of Construction per NFPA 220: (Check all that apply)
 Type I Type II Type III Type IV Type V
 I (443) II (222) III (211) (2HH) V (111)
 I (332) II (111) III (200) V (000)
 II (000)

Approved Systems Provided (Check all that apply):
 Automatic Sprinklers Fire Alarm
 NFPA 13 Throughout the Building Manual Activation Occupant Notification
 NFPA 13R Partial: Location _____ Automatic Activation General Zoned
 NFPA 13D Electrically Supervised Throughout the Building Voice Evacuation
 CSFSC 7-7.1.2 Isolated Hazardous Area System Partial Location: _____
 Location: _____ Water Flow Special System: _____
 Emergency Lighting NFPA 96 Hood System Other Activation Means: _____
 Smoke Control Standpipe; Class: _____ Other Systems: _____

Other Information: _____



SBA Communications Corporation
33 Boston Post Road West
Suite 320
Marlborough, MA 01752

T + 508.251.0720 x313
F + 508.251.1755

sbasite.com

CT State Fire Code Variance Request

Bryan Bakis

From: Kostandin Butka <kbutka@hudsondesigngroupllc.com>
Sent: Thursday, February 19, 2015 3:49 PM
To: Bryan Bakis
Subject: FW: 151 Sand Hill Road Tower - Hydrogen Tank Setback Requirements (Sprint Site CT33XC555)
Attachments: CT33XC555 CT Modification Request Form 11-14-14 FINAL.pdf

Bryan,
Please see attached.

Thank you

Kostandin Butka
Project Manager

Hudson Design Group LLC
978.557.5553 x230

From: Derek Creaser
Sent: Monday, November 17, 2014 4:43 PM
To: Summers, Walter
Subject: RE: 151 Sand Hill Road Tower - Hydrogen Tank Setback Requirements (Sprint Site CT33XC555)

Good afternoon Sir:

Attached is the modification request form for the hydrogen storage module setback at the telecommunication tower site. I've also included the abatement plan, picture and information from Reli-On appended to the file.

Please let me know if you would like to meet to discuss further.

Thank you,

Derek Creaser, PE
Sr. Project Manager
Hudson Design Group LLC
(617)306-3034

From: Summers, Walter [<mailto:Walter.Summers@southwindsor.org>]
Sent: Friday, November 07, 2014 3:50 PM
To: Derek Creaser
Subject: RE: 151 Sand Hill Road Tower - Hydrogen Tank Setback Requirements (Sprint Site CT33XC555)

Derek,

Thanks for the info. I informed my Building Official of the situation. I also contacted the original engineering firm who supplied the Town permitting documentation. They will be reviewing the information also and may be contacting you for clarification.

Thanks for your help

Walter Summers - Fire Marshal
Town of South Windsor
1540 Sullivan Ave,
South Windsor, CT. 06074
Phone: 860-644-2511 Ext. 217
Fax: 860-644-7280
walter.summers@southwindsor.org

Please note that messages to or from the Town of South Windsor may be subject to Freedom of Information statutes and regulations.

From: Derek Creaser [<mailto:derek.creaser@hudsondesigngroupllc.com>]
Sent: Friday, November 07, 2014 1:54 PM
To: Summers, Walter
Subject: 151 Sand Hill Road Tower - Hydrogen Tank Setback Requirements (Sprint Site CT33XC555)

Hi Walter,

It was good to speak with you today. As discussed, I've attached the NFPA 50A-94 code and preliminary site/ abatement plan for the Hydrogen Storage Module (HSM) installed at the SBA tower at 151 Sand Hill Road. I also included an email to Chick with my interpretation of the setback requirements for the HSM. In particular, I believe that the HSM does not meet the 15' unclassified electrical equipment setback or the 50' HVAC intake setback, but does appear to meet the 10' building setback.

Per your recommendation, I will call the John at the state Fire Marshall's office to obtain his interpretation.

I would also be open to meeting onsite or at your office to discuss the interpretations and potential Modification Request as required. Please feel free to contact me on my mobile number below.

Thank you,

Derek J. Creaser, P.E.
Sr. Project Manager
Hudson Design Group LLC
1600 Osgood Street
Suite 3090, Bldg 20N
North Andover, MA 01845



o: (978)557-5553 x238
m: (617)306-3034
f: (978)336-5586
www.hudsondesigngroupllc.com

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State of Connecticut, Department of Public Safety
 Division of Fire, Emergency & Building Services
 Office of State Fire Marshal

APPLICATION FOR REQUEST FOR MODIFICATION OF A REQUIREMENT OF A FIRE SAFETY REGULATION
 ADOPTED PURSUANT TO CHAPTER 541 OF THE CONNECTICUT GENERAL STATUTES

Reference No. _____

Facility Name: South Windsor (SBA/Sprint Site CT33XC555)

Facility Address: 151 Sand Hill Road, South Windsor, CT 06074
Number Street City State Zip

Facility Owner: SBA Towers II, LLC Telephone: 561-226-9523

Owner's Address: 5900 Broken Sound Parkway NW, Boca Raton, FL 33487
Number Street City State Zip

Applicant's Name: Hudson Design Group Telephone: 978-557-5553

Applicant's Address: 1600 Osgood Landing, Bldg 20N, Suite 3090, North Andover, MA 01845
Number Street City State Zip

Contact Person: Derek Creaser, PE Telephone: 617-306-3034

Type of Facility: Utility - Telecommunications Tower with Hydrogen Storage for backup generator
Office Building, LP-Gas Bulk Plant, Automotive Service Station, etc

This Facility is: New; Existing; Renovation; Date of Construction: 2012; Date of Present Use: current

Previous modifications for this Facility: Unknown; No; Yes, Modification Numbers: _____

Check if a Modification Request to the State Building Code is being submitted to the Office of State Building Inspector.

I, the above named applicant, being a lawful agent of the owner, request modification/relief from a requirement of the CT:

<input type="checkbox"/> Moving Picture Theater Code pursuant to C.G.S. § 29-109	<input type="checkbox"/> Gas Equipment & Piping Code pursuant to C.G.S. §29-329(c)
<input type="checkbox"/> Amusements/Tent and Portable Shelter Codes pursuant to C.G.S. § 29-140	<input type="checkbox"/> Liquefied Petroleum Gas & Liquefied Natural Gas Code pursuant to C.G.S. §29-333
<input type="checkbox"/> State Fire Safety Code pursuant to C.G.S. §29-296	<input type="checkbox"/> Hazardous Chemical Code pursuant to C.G.S. §29-338
<input type="checkbox"/> Oil Burning Equipment Code pursuant to C.G.S. §29-317(c)	<input type="checkbox"/> Fireworks and Special Effects Code pursuant to C.G.S. §29-357(c)
<input type="checkbox"/> Flammable & Combustible Liquids Code pursuant to C.G.S. §29-321	<input type="checkbox"/> Model Rocketry Code pursuant to C.G.S. §29-368

For the requirement as prescribed in:
 Regulation Number: 29-337 Standard: NFPA 50A Section Number: 3-2 & 4-1.2
29-202-Bd, 29-317-1b (if Applicable) NFPA 30, NFPA 54, etc Identify Section Number

I request this modification/relief due to the following reasons:
 Equivalent Alternative Practical Difficulty Requirements Unwarranted

Describe area of non-conformance with the appropriate regulation, its location in the facility, and a brief description why code compliance cannot be achieved, specify dimensions as applicable.

An existing Reli-On 8000 SCF Hydrogen storage module (HSM) at 3000 psi does not meet the setback requirements per NFPA 50A-94 Section 3-2.2 #11: 50' setback to inlets to HVAC; and Section 4-1.2: 15' setback to unclassified electrical equipment.
 Reli-On cites NFPA 497 for further information on classified electrical equipment locations; and seems to claim that the area directly adjacent to the HSM is not a classified location: "Experience has shown that the release of ignitable mixtures from some operations and apparatus is so infrequent that the area classification is not necessary."

Separate Sheet Attached

I intend to provide the following safeguard(s) as an alternative measure to secure public safety in lieu of strict compliance with the requirement of the 29-337 Section NFPA 50A-94 Sections 3-2 & 4-1.2 noted above:
Insert Name of Regulation for which Modification/Relief is being Requested Identify section of Code/Regulation

Propose to install a 2 hour fire barrier in lieu of the 15' unclassified electrical setback, and reduce the 50' setback to 25' for HVAC noting that a 50' setback may be unwarranted as telecommunication shelters have a Hydrogen detection and alarm system that notifies the network operations center to call the fire department.

Separate Sheet Attached

In addition the following are enclosed Plans/Drawings/Sketches; Photographs;
 Product Data Sheets Supplement Information Sheet

Other _____
as necessary for clarification of the information provided.

[Signature] 11/17/14
Applicant's Signature & Telephone Number Date

FOR LOCAL FIRE MARSHAL USE

I, Support, Do NOT Support, this Request for Modification to Connecticut _____;
Identify Code by Name; i.e. Fire Safety Code, Oil Burning Equip Code
Regulation of Connecticut State Agency _____ inclusive; as identified above to Section _____
Insert regulation Number i.e. 29-292-8d, 29-317-3a, etc
_____ because of the following reasons:
Identify code flow i.e. occupancy chapter, core chapter as applicable

Separate Sheet Attached

Fire Marshal Reviewer's Signature / Title Telephone Number Date

Contact me regarding this Request

STATE FIRE MARSHAL

The response of the Commissioner of Public Safety/State Fire Marshal to this request in accordance with Connecticut General Statutes § 29-_____ is attached on a separate sheet.

Supervisor's Initials

**APPLICATION FOR REQUEST FOR MODIFICATION OF A REQUIREMENT OF A FIRE SAFETY REGULATION
SUPPLEMENT INFORMATION SHEET**

If Modification request is for a building or structure, please complete the following:

Date of Construction: _____ Date of Occupancy for Present Use: _____
 Number of Stories (Above grade) _____ Dimension / Area Per Floor: _____
 Attic: Full Partial None
 Basement – # of Levels: _____ Full Partial None
 Finished Storage Crawl Space

Type of Occupancy (Check all that apply) New Existing Addition Renovation of building
 Change of Occupancy: From _____ to _____
 Assembly Occupant Load: _____ persons with locking II Large Small
 Educational with locking III Prompt Bed & Breakfast
 Business with locking IV Slow 1 & 2 Family
 Single Tenant with locking V Impractical Industrial
 Multiple Tenant Apartment No. of Units: _____ High Rise
 Mercantile Health Care
 Class A Day Care Hospital Underground
 Class B Adult Nursing Home Windowless
 Class C Family Ambulatory Other: _____
 Covered Mall Group Limited Other: _____

Type of Construction per NFPA 220: (Check all that apply)
 Type I Type II Type III Type IV Type V
 I (443) II (222) III (211) (2HH) V (111)
 I (332) II (111) III (200) V (000)
 II (000)

Approved Systems Provided (Check all that apply):
 Automatic Sprinklers Fire Alarm
 NFPA 13 Throughout the Building Manual Activation Occupant Notification
 NFPA 13R Partial: Location _____ Automatic Activation General Zoned
 NFPA 13D Electrically Supervised Throughout the Building Voice Evacuation
 CSFSC 7-7.1.2 Isolated Hazardous Area System Partial Location: _____
 Location: _____ Water Flow Special System: _____
 Emergency Lighting NFPA 96 Hood System Other Activation Means: _____
 Smoke Control Standpipe; Class: _____ Other Systems: _____

Other Information: _____





DECKED BY:	MRC		
APPROVED BY:	MRC		
REV	DATE	DESCRIPTION	BY

SITE NUMBER:
CT33XC555

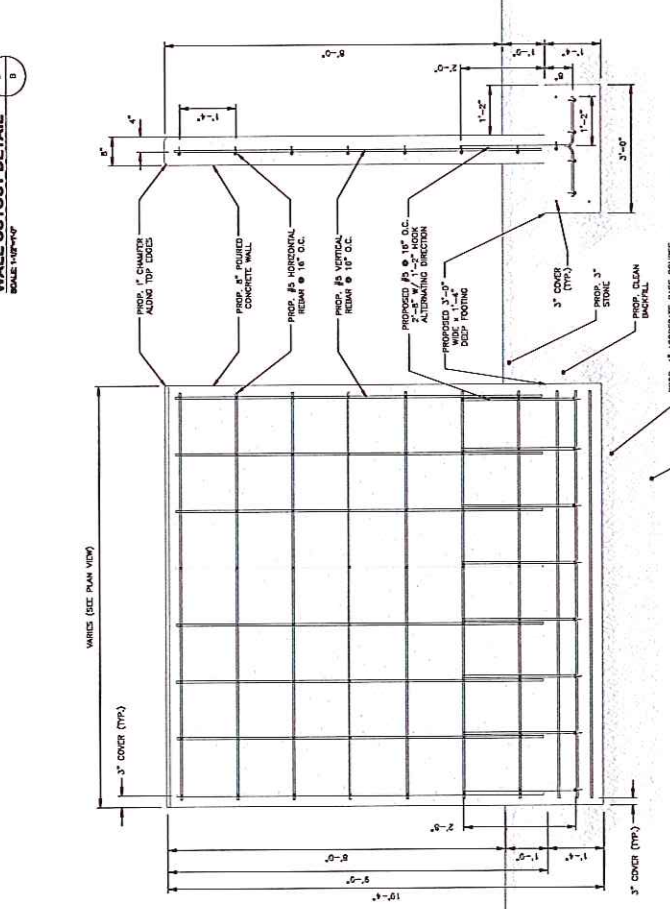
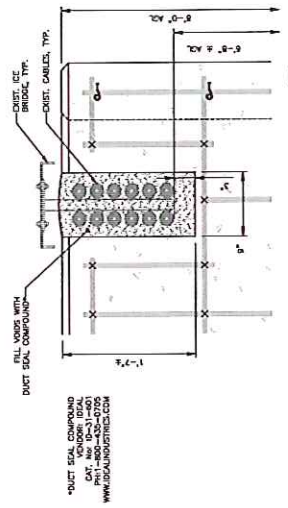
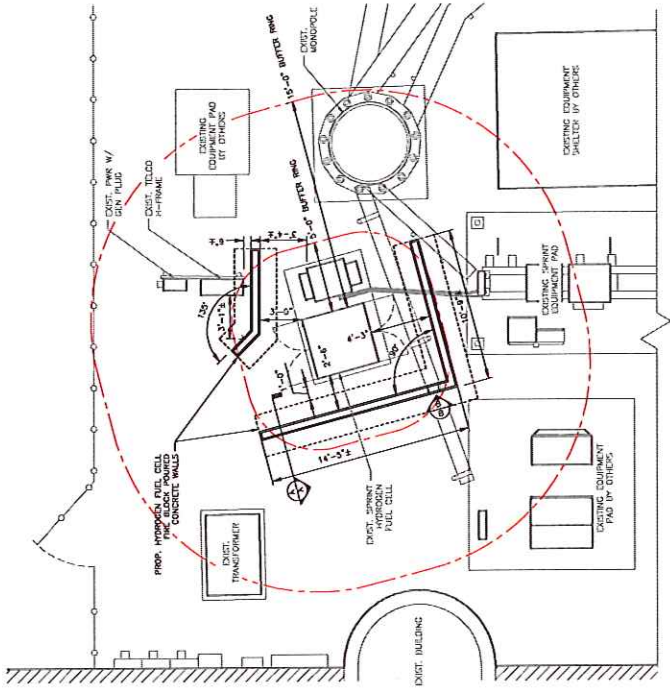
SITE NAME:
SOUTH WINDSOR

SITE ADDRESS:
181 SAND HILL ROAD
SOUTH WINDSOR, CT 06074

PROJECT NAME:
FIREWALL

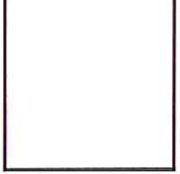
PROJECT NUMBER:
SK-1

- CONCRETE NOTES:**
- 1. CONTRACTOR SHALL LEAVE FORMS IN CLEAN CONDITION UNTIL THE CONCRETE HAS GAINED SUFFICIENT STRENGTH TO BE REMOVED. CONCRETE SHALL BE INSPECTED PRIOR TO PLACEMENT.
 - 2. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 308.
 - 3. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE PLACED IN THE SAME BATCH AS THE EXISTING CONCRETE TO BE REPAIRED. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
 - 4. CONTRACTOR TO VERIFY EXISTING CONCRETE SURFACE AND APPROVED ISOLATION JOINTS FOR REPAIRS (IF ANY).
 - 5. SOIL REPORT SHOULD BE CONSULTED PRIOR TO ANY WORK REQUIRED TO PREPARE SOIL FROM DAMAGING DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND STRUCTURES UNDERGROUND. ALL Voids around the casing shall be filled with prescribed construction grout, in accordance with approved construction methods, techniques, standards and procedures.
- NOTE:**
ALL DIMENSIONS TO BE HUNDREDS AND DISTANCE EQUIPMENT TO BEIGIN UNLESS NOTED OTHERWISE





PLANS PREPARED BY:
ADVANCED ENGINEERING GROUP, P.C.
 Civil Engineering - Site Development
 100 Main Street, Suite 200
 South Windsor, CT 06075
 Tel: (860) 336-8880



CHECKED BY: [Signature]
 APPROVED BY: [Signature]

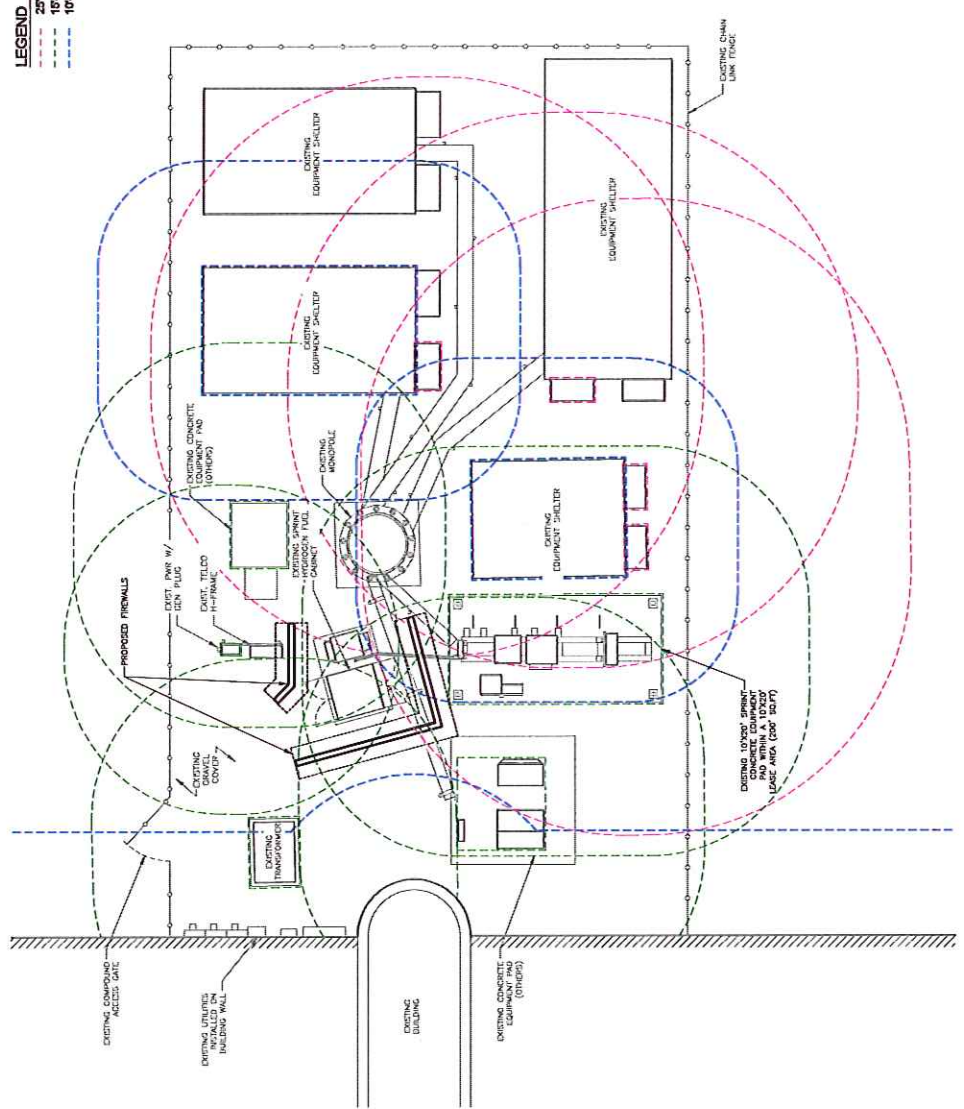
SUBMITTALS		
REV	DATE	DESCRIPTION

SITE NUMBER:
CT133XC555
 SITE NAME:
SOUTH WINDSOR
 SITE ADDRESS:
 161 SAND HILL ROAD
 SOUTH WINDSOR, CT 06074

CLEARANCE PLAN

SK-2

LEGEND
 --- 25'-0" HVAC CLEARANCE RADIUS
 --- 10'-0" UNCLASSIFIED ELECTRICAL CLEARANCE RADIUS
 --- 10'-0" BUILDING SETBACK



CLEARANCE PLAN
 SCALE 1/8\"/>



ReliOn, a Plug Power company
15913 E. Euclid Ave.
Spokane, Washington 99216
Telephone 509-228-6500
Facsimile 509-228-6510
www.relion-inc.com

August 8, 2014

Derek Creaser, PE
Sr. Project Manager
Hudson Design Group LLC

RE: Setback to Exposure Distance Questions for Gaseous Hydrogen Fuel Storage at Existing Sprint Sites on SBA Property in the State of Connecticut

Dear Mr. Creaser,

At your request, I have reviewed the email comments and corresponding attachments provided in your July 31st, 2014 email regarding SBA's concerns pertaining to the ReliOn fuel cell hydrogen gas storage at multiple Sprint sites located on SBA properties in the State of Connecticut. SBA's concerns were based upon the setback distances listed in NFPA documents and how they are related to the gaseous hydrogen fuel contained within the ReliOn hydrogen storage module (HSM) and the Sprint telecommunications gear adjacent to the storage.

Volumes could be written to discuss this topic but I will attempt to be as succinct as possible and provide guidance to the best of my knowledge, since though we would like to believe that the matter is absolute, it is actually very subjective. The one thing that is absolute is that all parties involved; authorities having jurisdiction (AHJ's), equipment manufacturers, landlords, liquid & gas fuel providers, inspectors, and end users all strive to promote and maintain an application with a reasonable level of safety. It is the responsibility of all parties involved, yet the ultimate responsibility is that of the AHJ whose charter it is to review the site and references various support documents, industry track record, and precedence during the permitting reviews for electrical, fire, building (planning/zoning), and any other locally mandated requirements within the jurisdiction. In order to mitigate risk the AHJ may choose to reference various documents such as the international (IFC) or state fire code, mechanical and/or fuel gas codes, NFPA codes & standards, or any other references which may also include manufacturer's literature. Some of these documents reference each other, and there are various ongoing edition releases and updates so the entire process is quite dynamic and confusing, though the overall purpose of providing a reasonable level of safety is still primary.

In the case of these Sprint sites on SBA property, these would have been permitted through an AHJ prior to construction. After looking at the slides you provided they appear to be a very typical application of our product applied per the recommendations in our manual and permitting guide. They are also indicative of the other 1900+ installed sites located within 46 US States and 36 countries around the globe, of which there have been no reported fire-safety incidents. This positive industry track record is the result of rigorous testing and the use of robust materials used to contain and transfer the hydrogen fuel gas, as well as hydrogen's inherent safety properties which include very low energy (<300 BTUs per cu-ft), extreme buoyancy (14x lighter than air), rapid dispersion rates, and extremely low heat emissivity whereby any possible combustion would

contain no carbon and therefore would radiate very little heat beyond the actual flame front itself. All of these properties are superior with regards to safety in comparison to legacy fuels such as diesel, gasoline, natural gas, or propane. As an example, 1 gallon of diesel fuel contains over 450x as much energy as 1 cu-ft of hydrogen gas fuel. Also, diesel, gasoline, and propane leaks tend to pool and collect to form long-lasting vapor zones while hydrogen rapidly rises and diffuses almost immediately.

The worst case scenario with hydrogen storage would be an unplanned fuel release due to a rupture of piping combined with an ignition source at the point of release which would have to occur simultaneously during this temporary event. This risk is mitigated through the use of a well-sealed storage containment (DOT cylinders and sealed piping) which prevents an unplanned release, as well as measures to keep normally arcing and sparking equipment outside of a possible release zone. The walls of the hydrogen storage module (HSM) provide an additional level of safety by turning any jetted release into a buoyant release up, out, and away from the storage area. Risk of ignition is mitigated through the nature of the site application since generally telecommunications devices (BTS, DC plant, batteries, AC power transformers & utility meters, routers, etc.) are not generally capable of acting as a source of ignition due to the equipment being sealed, or located within general purpose telecommunications enclosures.

The question was posed as to whether NFPA has any language addressing the setback distance from the gas storage to electrical equipment. NFPA55-2010 has a reference for unclassified electrical equipment (15') in Table 10.3.2.2.1(a) but caveats this with a note that indicates "when the area is in accordance with NFPA497."

NFPA497 "Classified Locations" provides language which indicates that the area directly surrounding flammable gas cylinders is Class 1, Division 2 (a type of classified location requiring non-arcing/sparking equipment), but then also provides additional language that makes a counterpoint that this type of outdoor application would not necessarily need to be classified. Chapter 3: Classification of Class I (Combustible Material) Areas states that "The decision to classify an area as hazardous is based upon the possibility that an ignitable mixture may occur." Subsection 3-1.2 Division 2 Classified Areas states that "The criterion for a Division 2 area is whether the area is likely to have ignitable mixtures present only under abnormal conditions." 3-1.2 claims that the area directly beyond the tank (DOT cylinder) wall is a Cl. I Div. 2 by definition, but to expand upon this general definition, a following Section 3-3 Unclassified Areas clarifies in 3-3.1 "Experience has shown that the release of ignitable mixtures from some operations and apparatus is so infrequent that the area classification is not necessary. For example it is not usually necessary to classify the following areas where combustible materials are processed, stored, or handled: (a) Areas that have adequate ventilation, where combustible materials are contained within suitable, well-maintained, closed piping systems" and "(c) Areas where combustible materials are stored in suitable containers."

Subsection 3-3.2 further clarifies that "Areas considered to have adequate ventilation include the following (a) An outside area."

Since this application meets these criteria,

- An outside area
- Materials stored in ½" thick steel DOT-certified containers

- Well maintained closed piping systems (stainless steel/brass, tanks recertified periodically by law and plumbing inspected yearly by owner per ReliOn's operators manual)

it is reasonable to conclude that the area can be considered Unclassified as opposed to CL1, Div. 2 and the 15' setback shown in NFPA55-2010 Table 10.3.2.2.1(a) and special wiring requirements of NEC Article 505 are non-applicable for this type of location. This is the decision that the AHJ makes during the permitting review process.

Though the language in NFPA can be quite ambiguous, the intent is clearly that one must make best efforts to keep the flammable gas from releasing and igniting. NFPA encourages one to look at established precedence and industry track records when making a safety evaluation. We believe that these types of outdoor applications using an HSM meet the intent of the language, and on a related note and as proof of performance, the ReliOn system has undergone an actual Network Equipment Building Systems (NEBS) brushfire test whereby the entire fuel cell system with hydrogen gas storage onboard was subjected to an induced brushfire as shown in the photo below.

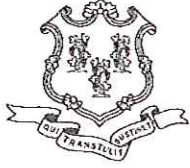


Actual Photo of a ReliOn System Undergoing and Passing the NEBS Standards Brushfire Test

The system passed the test and did not contribute to the fire in any way. Most diesel and propane generator manufacturers are not willing to perform this aggressive test, yet it is standard fare for ReliOn equipment and proves that we can be held to a higher standard. Feel free to contact me if you have any questions or concerns.

Best regards,

Mike Maxwell, PE
Director of Applications Engineering
ReliOn, Inc.
509-228-6612 (office) 509-879-0493 (mobile)
mmaxwell@reliion-inc.com



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

February 14, 2014

Kri Pelletier
SBA Communications Corporation
33 Boston Post Road West Suite 320
Marlborough, MA 01752

RE: **EM-SPRINT-132-140124** – Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 151 Sand Hill Road, South Windsor, Connecticut.

Dear Mr. Pelletier:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter;
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;
- The coax shall be installed in accordance with the Structural Analysis Report prepared by FDH Engineering dated December 2, 2013; and
- Within 45 days following completion of the antenna installation, Sprint shall provide documentation certified by a professional engineer that its installation complied with the recommendations of the structural analysis.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated January 23, 2014. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base,

February 14, 2014

Page 2

consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,



Melanie A. Bachman
Acting Executive Director

MAB/CDM/cm

c: The Honorable M. Saud Anwar, Mayor, Town of South Windsor
Michele R. Lipe, AICP, Town Planner, Town of South Windsor
SBA