



NSPIRE

Standards and Scoring PIH Fundamentals

June 20, 2023



NSPIRE

Standards

Speaker: Cliff Kornegay

Module Objectives

- Describe new framework for physical inspections and key changes from UPCS/HQS to NSPIRE
- Define key focus areas for HUD's NSPIRE Standards
- Describe health and safety deficiencies, determinations, and rationales
- Describe how to view NSPIRE Standards and available resources on HUD.gov



Changes from UPCS to NSPIRE

Mastering the NSPIRE standards will require learning a new framework

- **More Emphasis on:**

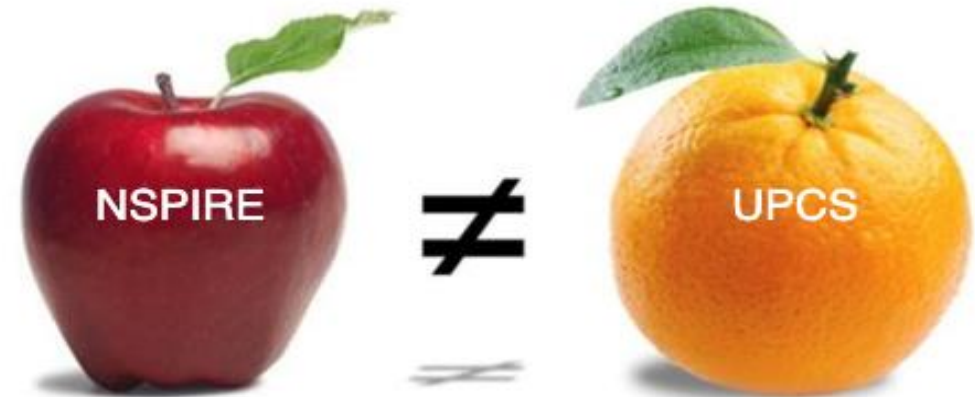
- Health, safety, and functional defects
- Areas that impact residents – their units

- **Less Emphasis on:**

- Condition and appearance defects
- Inspectable areas outside units

- **Objective Deficiency Criteria**

- Criticality levels do not exist within NSPIRE
- Removed subjective deficiency criteria based on feedback



What is the Same?

- Majority of inspectable items remain mostly unchanged
- Life threatening H&S deficiencies require 24-hour repair timeframe
- Continued assessment on deficiencies in H&S and function and operability

What is Changing?

- Moved away from 5 distinct inspectable areas: unit, common areas, building systems, site, building exterior
- Removed non-H&S items such as overgrown vegetation, non-security/safety fence damage, damaged trim, common area paint deterioration (post 1978 properties), exterior caulking damage, scratched counter tops
- Changed focus away from cosmetic deficiencies and prioritization of physical assets and the resident health and safety
- Compilation Bulletin and Non Industry Standards (NIS) does not apply to the NSPIRE standards

What is New?

- Consolidation of inspectable areas to 3: outside, inside, and unit
- More stringent standards for heating, GFCI/AFCI, electrical outlets, mold, infestation, and structural systems
- Enhanced standards for smoke alarms, CO alarms, fire doors, dryer exhaust, guardrails and handrails
- Revised H&S classifications and timeframes – increased urgency to 24-hour repair for life threatening and severe items and 30-day repair for moderate deficiencies

Deficiency Rationales

- Standards Notice includes rationales that describes the harm or negative result that could occur if that issue were to be present at a property
- Rationales provide a clear and defensible explanation based on sound science
- **Health & Safety (H&S)** make up most of the NSPIRE deficiency rationales because they are focused on the most critical elements that impact resident safety and habitability
- Additional NSPIRE rationale examples:
 - **Function and Operability**
 - **Condition and Appearance**
 - **Maintenance**
 - **Structural**

H&S Determinations

Life Threatening



Deficiencies that, if evident in the home or on the property, present a high risk of death or severe illness or injury to a resident.



Severe



Deficiencies that, if evident in the home or on the property, present a high risk of permanent disability, or serious injury or illness, to a resident; or the physical security or safety of a resident or their property would be seriously compromised.



Moderate



Deficiencies that, if evident in home or on property, present a moderate risk of an adverse medical event requiring a healthcare visit; cause temporary harm; or if left untreated, cause or worsen a chronic condition that may have long-lasting adverse health effects; or that the physical security or safety of a resident or their property could be compromised.



Low



Deficiencies critical to habitability but not presenting a substantive health or safety risk to residents.

Inspectable Areas

NSPIRE establishes the inspectable areas of a REAC inspection into three easily identified locations: Unit, Inside, and Outside.

- This increases the usability of the standards and streamlines the inspection process
- Ensures that all residents live in safe, habitable homes, the items and components located inside the building, outside the building, and within the units of HUD housing must be functionally adequate, operable, and free of health and safety hazards
- This streamlined approach allows inspectors to cite deficiencies based on where they are standing and eliminates potential subjectivity or ambiguity about a deficiency's location

Inspectable Areas Continued

Unit

A "Unit" of housing refers to the interior components of an individual dwelling, where the resident lives.

Inside

"Inside" refers to the common areas and building systems within the building interior and are not inside a unit. This could include interior laundry facilities, workout rooms, etc.

Outside

"Outside" refers to the building site, building exterior components, and any building systems located outside of the building or unit. This includes things like sidewalks, parking lots, and retaining walls.

Unit



Inside



Outside



Example Unit Life Threatening Defects



Chimney or flue piping is blocked, misaligned, or missing (i.e., evidence of prior installation, but now not present or is incomplete).



Electrical conductor is not enclosed or properly insulated (e.g., damaged sheathing, open port, missing knockout, missing outlet or switch cover, missing breaker or fuse, or missing lightbulb).



Smoke alarm is not installed inside each sleeping area, outside each sleeping area, and on each level.

Core Health & Safety Focus

The eight focus areas are critical to the habitability and safety of residents



Addressing Fire Safety

NSPIRE improves fire safety standards in several ways from UPCS



- ✓ Implementation of National Fire Protection Association (NFPA) 72
- ✓ Minimum temperature requirement
- ✓ Permanent heating source requirement
- ✓ Prohibition of fuel burning unvented space heaters
- ✓ New fire sprinkler defects related to the proper functioning of these systems
- ✓ GFCIs, AFCIs, CO alarms, dryer exhaust, and electrical outlets
- ✓ More stringent & specific fire door requirements

Addressing Fire Safety Cont.

NSPIRE conforms with (NFPA 72)

- NFPA 72 is the preeminent national standard for smoke alarms and fire and existing Housing Quality Standards for vouchers align with this standard

NSPIRE Smoke Alarm Standards Conform with 2019 NFPA 72 Requiring:

At least one working smoke alarm installed on every level of property



At least one working smoke alarm installed outside every sleeping area



At least one working smoke alarm installed inside each bedroom



- Lack of conformance with the NSPIRE smoke alarm standard requires mitigation within 24 hours

Within two years new NFPA 72 fire safety requirements will be in effect

- Fire alarms without sealed ten-year batteries will need to be fully replaced

Addressing Fire Safety Cont.

Properly functioning heating systems are critical to maintain healthy unit temperatures and prevent fires in public housing

Housing Opportunity through Modernization Act directed HUD to set minimum temperature standards

- PIH Notice 2018-19 set a minimum heating temperature standard for public housing
- The PIH notice set 68 degrees, which is carried over into NSPIRE
- Forthcoming NSPIRE Standards Notice will contain the heating source and space heater requirements
 - It will include potential exceptions for tropical climates

Addressing Fire Safety Cont.

Properly functioning fire doors are critical to slow the spread of fire and smoke in buildings

Fire doors have been addressed in NSPIRE with a standard specific to fire doors

Under UPCS fire doors were inspected and cited with other non-fire doors



The fire door standard details the specific function, operability and structural integrity requirements for fire doors



Defects and deficiency criteria will be based on research and discussions with fire safety professionals



Addressing Fire Safety Cont.

Properly functioning fire sprinklers are critical for the suppression of fires

Current NSPIRE
version has
additional defects
and criteria

1

Deficiency criteria is more detailed
and objective

2

New deficiency for obstruction of
the spray area

3

Some deficiencies have elevated
severity levels

Final standard will address foreign material on sprinklers that doesn't
impact performance

Fire and Electrical Shock Hazards

New standards and deficiencies address:

Ground Fault Circuit
Interrupters

Arc Fault Circuit
Interrupters

Properly Wired Outlets

Grounded Outlets

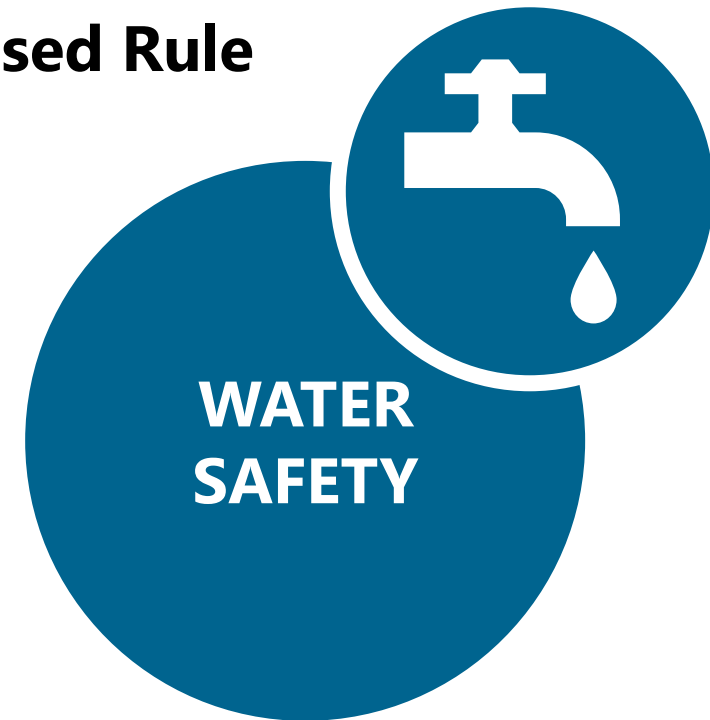
Addressing Water Safety

Water safety was introduced through the NSPIRE Proposed Rule

HUD recognizes the EPA is the government agency tasked with testing and measuring water quality

HUD is considering collecting information on local water outages or water quality alerts

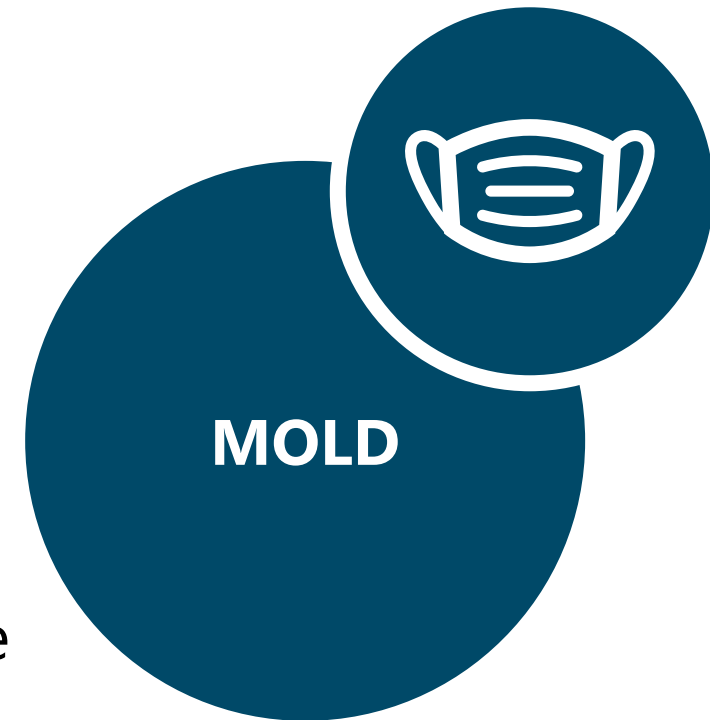
HUD is considering recording observations of lead water service lines in HUD assisted properties



Addressing Mold & Moisture

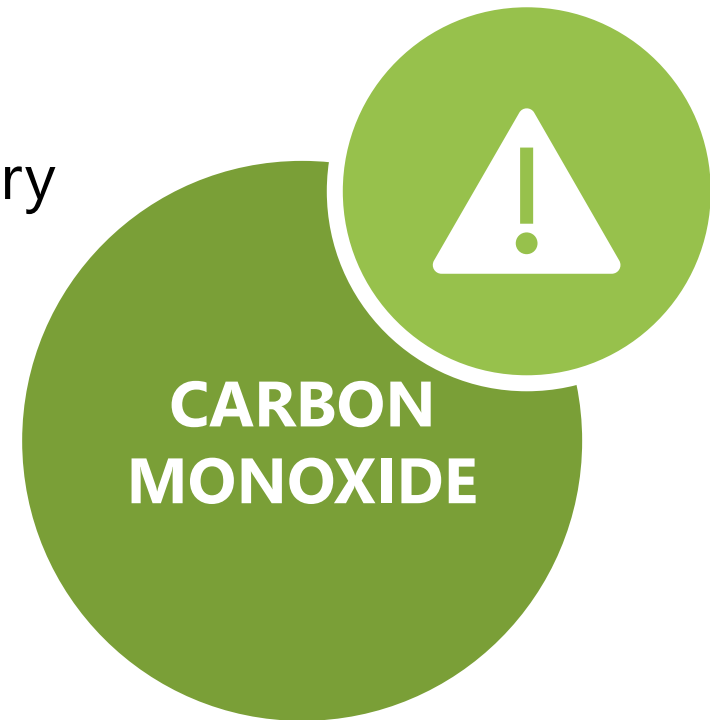
NSPIRE takes a comprehensive approach to mold and moisture

- Objective and measurable mold deficiency criteria that recognizes different severity levels
- The current mold standard also contains a deficiency for ventilation or dehumidification of bathrooms
- The most recent leak standard contains multiple deficiencies with specific criteria to capture a broad range of plumbing and environmental leaks
- NSPIRE is considering **requiring the use of moisture meters** and **recommending the use of infrared cameras** during inspections



Carbon Monoxide Alarms

- Transitioning from a survey question to an enforceable standard
- 2021 Consolidated Appropriations Act included a statutory requirement for CO alarms to be installed with the requirements of the 2018 International Fire Code
 - Effective date of requirement was December 27, 2022
 - Chapters 9 & 11 of the 2018 IFC contain the specific installation requirements & are available free online
- REAC notice published December 27, 2022 for the implementation of the CO requirements within UPCS before the NSPIRE final rule is published and effective
- Decision tree for CO installation guidance published to NSPIRE website December 27, 2022

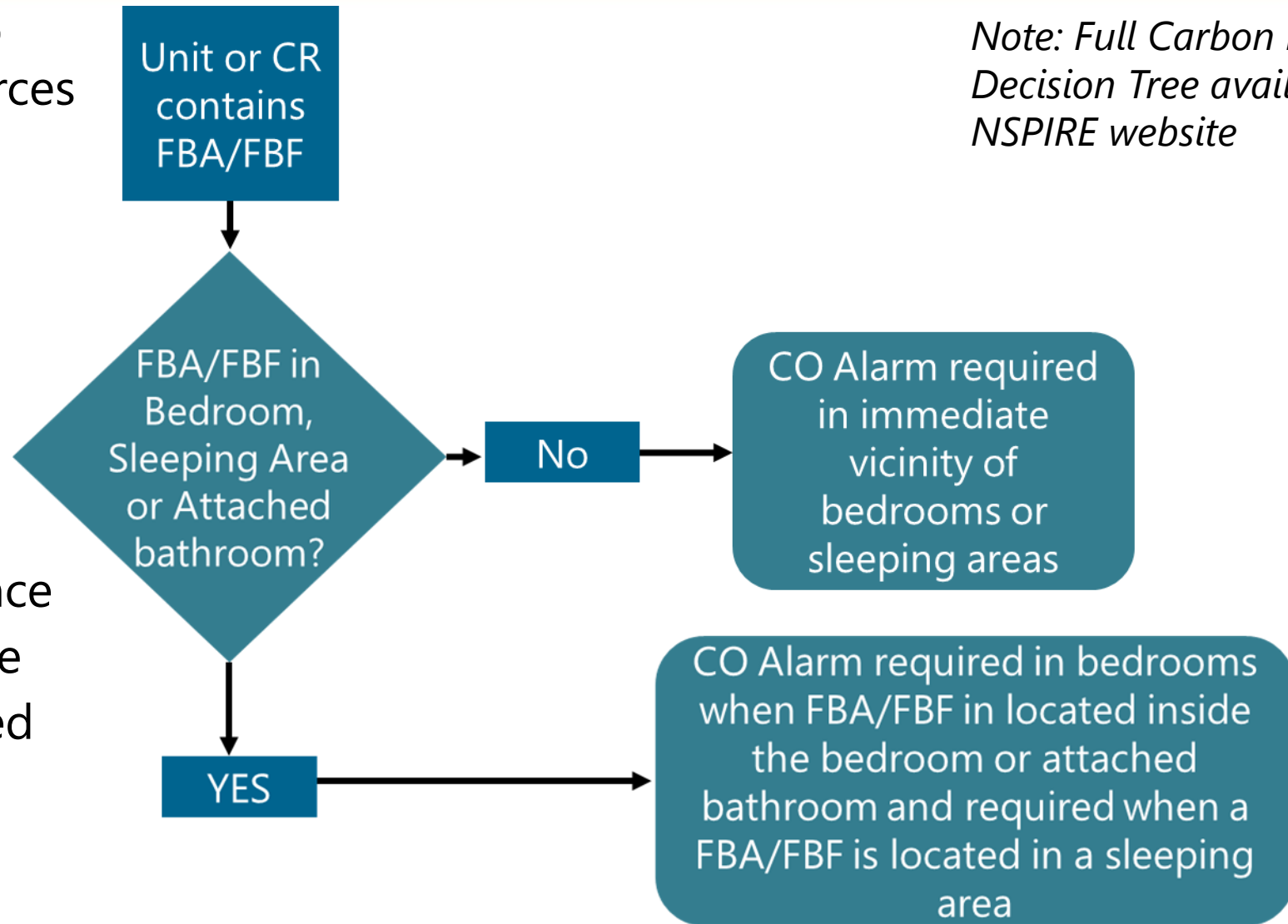


Carbon Monoxide Decision Tree Example

A guide for determining CO requirements based on sources of carbon monoxide and location

Note: Full Carbon Monoxide Decision Tree available on NSPIRE website

CR = Classroom
FBA = Fuel Burning Appliance
FBF = Fuel Burning Fireplace
FBFAF = Fuel Burning Forced Air Furnace



Addressing Infestation

NSPIRE infestation standards are changing

- Objective deficiency criteria
 - Specific observed numbers of pests result in different severity levels
- REAC is considering alternative correction options and longer time frames for properties using industry best practices
 - An example of best practices would be integrated pest management



Addressing Lead Based Paint

NSPIRE will have a different approach than UPCS

- Current lead-based paint standard
 - Incorporates requirements from HUD's Lead Safe Housing Rule for the voucher program
 - In buildings constructed before 1978, inspector will perform a visual assessment for deteriorated paint in units with children under age 6
 - NSPIRE does not replace HUD's Lead Safe Housing Rule requirements





NSPIRE Standards Webpage



You can find the standards on the NSPIRE Standards web page

This web page provides:

- Ability to view the standards and download:
 - Single standards
 - All standards in a zip file
- Guidance for navigating the standards



NSPIRE Standards Webpage



Standards Update

HUD published the Proposed **National Standards for the Physical Inspection of Real Estate (NSPIRE)** in the Federal Register on June 16, 2022. The public comment period closed on August 1, 2022. The final set of standards will be published in the Federal Register following HUD's review and adjudication of public comments.

Current Standards

STANDARDS	Version	Last Updated	Inspectable area(s) standard applies to:		
			Unit	Inside	Outside
Address and Signage Standard	2.2	06-23-2022			Y
Bathtub and Shower Standard	2.2	06-23-2022	Y	Y	
Cabinets Standard	2.2	06-23-2022	Y	Y	
Call-for-Aid System Standard	2.2	06-23-2022	Y	Y	
Carbon Monoxide Alarm Standard	2.2	06-23-2022	Y	Y	
Ceiling Standard	2.2	06-23-2022	Y	Y	

NSPIRE Standards Template Guide



To help inspectors, quality control reviewers, and other stakeholders understand the terminology and layout of the NSPIRE standards, HUD developed a standards template guide to provide:

- Terminology
- Layout of the standards
- An overview of each component section of a standard, from front to back

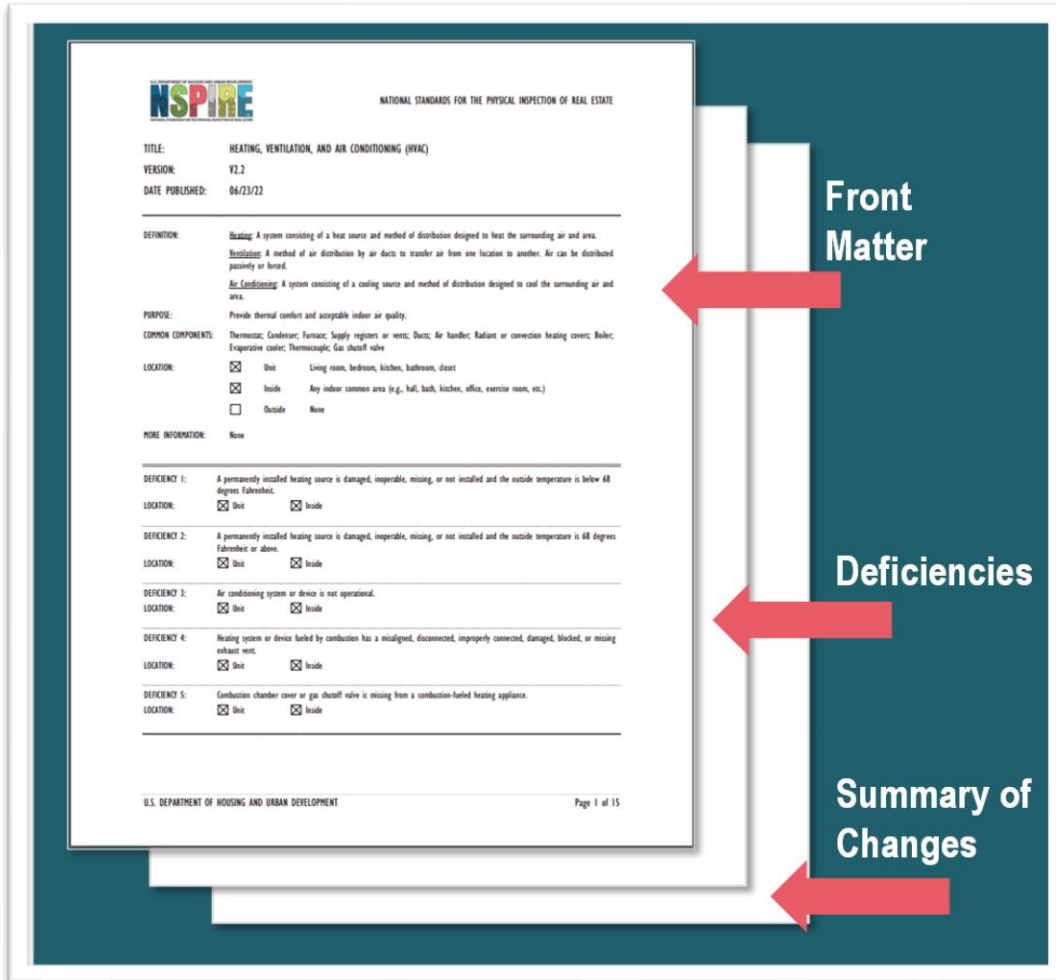


The image shows a template for NSPIRE standards, titled "NATIONAL STANDARDS FOR THE PHYSICAL INSPECTION OF REAL ESTATE". The template is divided into several sections with specific instructions for each:

- TITLE:** States the title of the standard
- VERSION:** States the version of the standard (e.g., V1.3)
- DATE PUBLISHED:** Lists the date the version of the standard was published (e.g., 7/31/20)
- DEFINITION:** Defines the standard
- PURPOSE:** States the function, use, or purpose the item serves in the built environment, if applicable (i.e., if the standard refers to an item)
- NAME VARIANTS:** Lists other possible names that refer to the item
- COMMON MATERIALS:** Lists the most common materials that make up the item (e.g., wood, metal)
- COMMON COMPONENTS:** Lists the most common components that make up the item (e.g., shower head, faucet, drain)
- LOCATION:** Includes checkboxes for ☐ Unit, ☐ Inside, and ☐ Outside, each with a description of the area.
- MORE INFORMATION:** States additional information that is relevant to the item
- DEFICIENCY 1:** Lists the deficiency applicable to the standard. Below, the boxes are selected to define whether the specific deficiency applies to the Unit, Inside, or Outside inspectable area.
- LOCATION:** Includes checkboxes for ☐ Unit, ☐ Inside, and ☐ Outside.

The footer of the template reads "U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT" and "Page 1 of 3".

Organization of NSPIRE Standards



The diagram illustrates the organization of NSPIRE Standards, showing three overlapping pages. The top page is labeled 'Front Matter', the middle page is labeled 'Deficiencies', and the bottom page is labeled 'Summary of Changes'. Red arrows point from the labels to the corresponding pages.

Front Matter

NSPIRE
NATIONAL STANDARDS FOR THE PHYSICAL INSPECTION OF REAL ESTATE

TITLE: HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)
VERSION: V2.2
DATE PUBLISHED: 06/23/22

DEFINITION: **Heating:** A system consisting of a heat source and method of distribution designed to heat the surrounding air and area.
Ventilation: A method of air distribution by air ducts to transfer air from one location to another. Air can be distributed passively or forced.
Air Conditioning: A system consisting of a cooling source and method of distribution designed to cool the surrounding air and area.

PURPOSE: Provide thermal comfort and acceptable indoor air quality.

COMMON COMPONENTS: Thermostat; Condenser; Furnace; Supply registers or vents; Ducts; Air handler; Radiant or convection heating covers; Boiler; Evaporative cooler; Thermocouple; Gas shutoff valve

LOCATION: ☒ Unit Living room, bedroom, kitchen, bathroom, closet
☒ Inside Any indoor common area (e.g., hall, bath, kitchen, office, exercise room, etc.)
☐ Outside None

NOTE INFORMATION: None

DEFICIENCY 1: A permanently installed heating source is damaged, inoperable, missing, or not installed and the outside temperature is below 48 degrees Fahrenheit.
LOCATION: ☒ Unit ☒ Inside

DEFICIENCY 2: A permanently installed heating source is damaged, inoperable, missing, or not installed and the outside temperature is 48 degrees Fahrenheit or above.
LOCATION: ☒ Unit ☒ Inside

DEFICIENCY 3: Air conditioning system or device is not operational.
LOCATION: ☒ Unit ☒ Inside

DEFICIENCY 4: Heating system or device fueled by combustion has a misaligned, disconnected, improperly connected, damaged, blocked, or missing exhaust vent.
LOCATION: ☒ Unit ☒ Inside

DEFICIENCY 5: Combustion chamber cover or gas shutoff valve is missing from a combustion-fueled heating appliance.
LOCATION: ☒ Unit ☒ Inside

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT Page 1 of 15

HUD redesigned the format and language of the Standards

- Beginning section (front matter)
 - Defines the inspectable item
 - Summarizes the deficiencies
- Deficiencies
 - In order of inspectable area
 - Provides additional information on the process to inspect the deficiency
- Summary of Changes lists revisions to the standard

Deficiencies - Inspection Process

Example Standard: Address, Signage

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT		NSPIRE		NATIONAL STANDARDS FOR THE PHYSICAL INSPECTION OF REAL ESTATE	
DEFICIENCY I — OUTSIDE: ADDRESS, SIGNAGE, OR BUILDING IDENTIFICATION CODES ARE BROKEN, ILLEGIBLE, OR NOT VISIBLE.					
DEFICIENCY CRITERIA:		Address or building identification codes are broken, illegible, or not visible.			
HEALTH AND SAFETY DETERMINATION:		Moderate	The Moderate Health and Safety category includes deficiencies that, if evident in the home or on the property, present a moderate risk of an adverse medical event requiring a healthcare visit; cause temporary harm; or if left untreated, cause or worsen a chronic condition that may have long-lasting adverse health effects; or that the physical security or safety of a resident or their property could be compromised.		
CORRECTION TIMEFRAME:		30 days			
HCV PASS / FAIL:		Fail			
HCV CORRECTION TIMEFRAME:		30 days			
INSPECTION PROCESS:					
OBSERVATION:		<ul style="list-style-type: none"> - Look at the property and locate any signage or address. - Look at individual buildings on the property and locate any signage or building identification codes identifying the building. 			
REQUEST FOR HELP:		None			
ACTION:		Approach the entrance to the building from the main street, road, or parking area.			
MORE INFORMATION:		None			

- Each deficiency includes an Inspection Process section
- Inspection Process subsections:
 - Observation
 - Request for Help (e.g., from resident or POA)
 - Action
 - More Information



Summary of Changes



- As part of its continuous improvement of NSPIRE, HUD documents the revisions it makes to each standard
- The Summary of Changes is provided at the end of each standard and lists:
 - Fields updated in the standard
 - Revision dates starting with the most recent version

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT			
NSPIRE			
NATIONAL STANDARDS FOR THE PHYSICAL INSPECTION OF REAL ESTATE			
SUMMARY OF CHANGES			
TITLE:	ADDRESS AND SIGNAGE		
VERSION:	V2.2		
DATE PUBLISHED:	06/23/22		
FIELD	CHANGE	VERSION	DATE
-----	Abbreviated published version	V2.2	2022-06-23
	Name Variants	Removed from published version	
	Common Materials	Removed from published version	
	Rationale	Removed from published version	
	Tools or Equipment	Removed from published version	
Deficiency I		V2.2	2022-06-23
	Health and Safety Determination	Relabeled from "Standard" to "Moderate"	
-----	Copy edits	V2.1	2021-04-02
Deficiency I		V2.0	2020-10-28

Key Takeaways

- NSPIRE strengthens HUD's physical condition standards to emphasize resident health and safety in their units
- NSPIRE aligns inspection standards across all HUD-assisted properties, as directed by Congress
- Get ready now for changes to come (e.g., check fire doors, smoke alarms, carbon monoxide alarm)
- NSPIRE Standards can be found on [HUD.gov](https://www.hud.gov)



NSPIRE

Questions and Feedback

NSPIRE@hud.gov or search for "HUD NSPIRE" found on HUD.gov

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NSPIRE

Proposed Scoring Model

Speaker: Cliff Kornegay

Background - UPCS Scoring Model

100-point Score Scale:

- The best possible inspection score is 100 and deficiencies generally cause the inspection score to decrease by some amount

Area, Sub-Area, and Item Scoring

- The total score of 100 is divided into successively smaller weights: (1) inspectable area, which divides into (2) sub-area, which is sliced into (3) items; this system creates limits on point deductions

Criticality and Severity Level:

- Each defect contains a predetermined severity and criticality level, which is multiplied by the item-based weight

Area	Typical % of Property Inspection Score
Units	35
Building Systems	20
Common Areas	15
Building Exterior	15
Site	15

Criticality Level	Multiplier Value
5	5.00
4	3.00
3	2.25
2	1.25
1	0.50

Severity Level	Multiplier Value
3	1.00
2	0.50
1	0.25

Draft NSPIRE Physical Inspection Model Features



UPCS Comparison to NSPIRE Scoring Model



UPCS	NSPIRE
Complex system of weightings, multipliers, and limits	Simplified four-step scoring system
Unsafe properties could still receive a passing score for a variety of reasons, including mechanisms of “capped” item and area weights	Unsafe properties will not receive a passing score due to focus on Health & Safety and Unit-based defects
Item and area weights could sometimes cause less important defects to disproportionately factor into inspection scoring	Defect Impact Weights table creates clear hierarchy of defect importance on Inspection Score

Draft Scoring 4-Step Process

Under the **draft** NSPIRE Scoring Model, the four steps to score an inspection are summarized as follows:

Property Threshold of Performance

1. Count scorable defects at property and categorize them by severity and location. Multiply each defect by its corresponding value in **Defect Impact Weights** table (shown in slide 97) to yield *total defect points*.
2. Size-adjust *total defect points*.
3. Subtract *size-adjusted defect points* from 100 to calculate *0-100 score*.

Unit Threshold of Performance

4. Perform steps 1 and 2 above, but consider only defects located within Units.

NSPIRE Draft Scoring: Steps 1-3

- Steps 1-3 of the **draft** NSPIRE Scoring Model can be simplified by the following equation:

$$100 - (A/B) = \text{Property Threshold of Performance}$$

Where:

A = the sum of all defect points

B = the number of units sampled (inspected) in that inspection

- When the Property Threshold of Performance is less than (<) 60, the property fails its physical inspection

NSPIRE Draft Scoring: Step 4

- Step 4 of the **draft** NSPIRE Scoring Model can be simplified by the following equation:

$$(C/B) = \text{Unit Threshold of Performance}$$

Where:

C = the sum of all defect points located within Units

B = the number of units sampled (inspected) in that inspection

- When the Unit Threshold of Performance is greater than or equal to (\geq) 30, the property fails its physical inspection (i.e., the overall score is automatically set to 59)

Draft NSPIRE Physical Inspection Model Details

Defect Examples



	Outside	Inside	Unit
Life-Threatening	Gas dryer exhaust ventilation system has restricted airflow.	Structural system exhibits signs of serious failure.	Natural gas, propane, or oil leak.
Severe	Leak in sewage system.	Fire labeled door does not close and latch or self-close and latch.	Entry door cannot be secured.
Moderate	Trip hazard on walking surface.	Garage door does not open, close, or remain open or closed.	Sink is not draining.
Low	Water runoff is unable to flow through the site drainage system.	Refrigerator component is damaged such that it impacts functionality.	A passage door component is damaged, inoperable, or missing and the door is not functionally adequate.

NSPIRE Defect Impact Weights

- The **draft Defect Impact Weights** table shown below is the backbone of the scoring model

	Outside	Inside	Unit
Life-Threatening	49.6	54.5	60
Severe	12.2	13.4	14.8
Moderate	4.5	5	5.5
Low	2	2.2	2.4



NSPIRE Defect Impact Exceptions



Draft Unscored Defects

The following defects are not scored in recognition of REAC's long-standing practice:

- Smoke Alarm Defects
- Carbon Monoxide Alarm Defects

Draft Affirmative Defects

HUD understands that it may take properties' ownership and management some time to comply with standards that were not expressly covered under UPCS; therefore, it is expected that the following new "Affirmative" defects* are not scored in the first 12 months of NSPIRE inspections for the program:

- GFCI protected outlets within 6 feet of a water source
- Guardrails for elevated walkways
- Permanently installed heating source for certain climate zones
- Permanently mounted light fixture in the kitchen and each bathroom

* Though unscored, these defects must still be corrected within the allotted timeframe (e.g., 24 hours, 30 days)

Categorization into Letter Grades

Grade A	Good condition with the least number of concerning defects. Aligns with "Standard 1 Performing Property."	Inspection every 3 years	≥ 90	Passing Grade
Grade B	Good condition but with more concerning and yet easily addressable defects. Aligns with "Standard 2 Performing Property."	Inspection every 2 years	$\geq 80 < 90$	
Grade C	Okay condition with higher number of concerning and yet addressable defects. Close monitoring is needed. Aligns with "Standard 3 Performing Property."	Inspection annually	$\geq 70 < 80$	Substandard Grade
Grade D	Challenged condition with high prevalence H&S defects that may not be easily addressable. Close monitoring is needed. Aligns with "Standard 3 Performing Property."	Inspection annually	$\geq 60 < 70$	
Grade E	Failing condition with high prevalence of concerning H&S defects. Close, regular monitoring needed. Administrative action may be needed to protect residents.	Higher inspection frequency	$> 30 < 60$	Failing Grade
Grade F	Failing condition with extremely high prevalence of concerning H&S defects. Actions should be taken to protect residents. Referred to DEC.	Highest inspection frequency	≤ 30	

NSPIRE Score Calculation: Example

NSPIRE Draft Scoring: Example



- **Example Property Z**

- In this example, **Property Z** has been inspected. **20 units** were sampled across several different buildings and a total of **53 defects** were found at the property.
- None of the defects at Property Z fell into the two exception categories: unscored or affirmative defects
- The 53 defects can be categorized into the following Severity and Location buckets:

	Outside	Inside	Unit
Life-Threatening	0	4	3
Severe	0	1	7
Moderate	2	3	11
Low	5	3	14

NSPIRE Draft Scoring: Step 1

- The following table counts the number of defects in each category at **Property Z**

	Outside	Inside	Unit
Life-Threatening	0	4	3
Severe	0	1	7
Moderate	2	3	11
Low	5	3	14

- Multiply the defect counts by the corresponding weights in the **Defect Impact Weight** table (see next slide for calculation)

	Outside	Inside	Unit
Life-Threatening	49.6	54.5	60
Severe	12.2	13.4	14.8
Moderate	4.5	5	5.5
Low	2	2.2	2.4

NSPIRE Draft Scoring: Step 1

- **Step 1:** Use the count of defects and the Defect Impact Weights to calculate the sum of all defect points

	Outside	Inside	Unit			Outside	Inside	Unit			Outside	Inside	Unit
Life-Threatening	0	4	3	X	LT	49.6	54.5	60	=	LT	0	218	180
Severe	0	1	7		Severe	12.2	13.4	14.8		Severe	0	13.4	103.6
Moderate	2	3	11		Moderate	4.5	5	5.5		Moderate	9	15	60.5
Low	5	3	14		Low	2	2.2	2.4		Low	10	6.6	33.6

Value A = the sum of all defect points:
649.7

$100 - (A/B) = \text{Property Threshold of Performance}$

After calculating value A above, the equation for Property Threshold of Performance = $100 - (649.7/B)$

NSPIRE Draft Scoring: Step 2 & 3

- **Step 2** Calculation:
 - Include the number of units sampled as value B in order to normalize by property size. As a reminder, in Example Z, 20 units were sampled
 - After including the number of units sampled as Value B, the equation for Property Threshold of Performance = $100 - (649.7/20)$
- **Step 3** Calculation:
 - Perform the math and subtract from 100
 - $100 - (32.5) = 67.5$
- **Property Threshold of Performance:**
 - Example Property Z would receive a Property Threshold of Performance of **67.5**, which would round up to **68**.

NSPIRE Draft Scoring: Step 4

- **Step 4** Calculation – consider only Unit defect points:

	Outside	Inside	Unit			Outside	Inside	Unit			Outside	Inside	Unit
Life-Threatening	0	4	3	X	LT	49.6	54.5	60	=	LT	0	218	180
Severe	0	1	7		Severe	12.2	13.4	14.8		Severe	0	13.4	103.6
Moderate	2	3	11		Moderate	4.5	5	5.5		Moderate	9	15	60.5
Low	5	3	14		Low	2	2.2	2.4		Low	10	6.6	33.6

Value C = the sum of all defect points located within units:

377.7

(C/B) = Unit Threshold of Performance

After calculating value C above and inputting value B for units sampled, the equation for Unit Threshold of Performance = $(377.7/20) = 18.9$

NSPIRE Draft Scoring: Example Summary

- **Example Property Z Summary:**

Property Threshold of Performance:

Step	Notation	Property Z
Step 1	A	649.7
Step 2	B	20
Step 2	A/B	32.5
Step 3	$100 - A/B$	$67.5 \rightarrow$ 68

Unit Threshold of Performance:

Step	Notation	Property Z
Step 4	C	377.7
Step 4	B	20
Step 4	C/B	18.9

Property Z would have scored a Property Threshold of Performance of **68**, which corresponds to a passing score with letter grade **D**.

Since the Unit Threshold of Performance value is **18.9**, which is less than 30, Property Z would also pass its inspection under the Unit Threshold of Performance.

Draft NSPIRE Sampling Plan

Draft NSPIRE Sampling Plan

- **Not Finalized – currently undergoing calibration**
- **Draft NSPIRE Sampling Plan:**
 - Number of Units Sampled during inspections may increase under NSPIRE
 - Buildings *may* be inspected with a likelihood that is related to their number of units (e.g., buildings with higher unit counts are more likely to be inspected)
 - Resident-selected units may be supplemental to the Inspection Sample; these units will not be scored*

* unless they are randomly selected as part of the traditional inspection sample process



NSPIRE

Questions and Feedback

NSPIRE@hud.gov or search for "HUD NSPIRE" found on HUD.gov

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