

# An Industry Response to Compliance Concerns: AHAM Verification Programs

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*Leadership > Knowledge > Innovation*

# Manufacturer Support of Ratings Verification

- Concerns over validity of ratings
- Test procedures not keeping up with technology
- Growing importance of high efficiency appliances
- Regulatory support for certification and verification
- New Energy Star Requirements
- DOE Notice of Proposed Rulemaking

# AHAM Refrigerator/Freezer Verification Program

- Objective
  - Implement a voluntary, industry-sponsored verification program for all refrigerator and freezer products to strengthen consumer, retailer and government confidence in reported energy ratings.
  - Program will communicate adverse final tests and determinations to appropriate regulatory agencies within the U.S. and Canada (NR Can, DOE, EPA, FTC), but government will continue to determine ultimate compliance with regulatory and Energy Star program requirements. Program will require public rerates and possible withdrawal of models from market.
  - Will be extended to dishwashers and clothes washers and enhancement of existing room air conditioners, dehumidifiers, and portable air cleaner programs.

# AHAM Refrigerator and Freezer Verification Program Goals

- Began as soon as possible – already underway -- cannot wait for new DOE standards to go into effect in 2014
- Very high percentage of production involved in program
- Verification testing will be completed by a third party laboratory (CSA), contracted by AHAM, but in a transparent manner with significant government input and oversight
- Samples for testing will be randomly selected using a realistic, but cost effective, approach
- Testing will be completed to most recent test procedure clarifications
- Program will allow challenges
- Program will incorporate an independent technical panel to provide test procedure interpretations when needed, but in communication/coordination with governments

# Program Scope

- Product Certification
  - Program Laboratory (CSA) will accept certified data from a Supervised Manufacturer Testing (SMT) facility or a third party lab accredited to ISO 17025
- Factors Verified
  - Annual energy consumption
  - Internal volume
- Test Procedure
  - DOE Test Procedure (10 CFR Part 430, Subpart B, Appendix A-1 and Appendix B-1)
  - Additional specificity provided by ANSI/AHAM HRF-1-2007 and 2009 CSA Informs (and future government guidance)
- Products Covered
  - Refrigerators
  - Refrigerator-Freezers
  - Freezers
- Eligible Models
  - All refrigerator/freezer models for sale within the U.S. and Canada, including compacts
  - Program requires “all-or-none” participation

# AHAM Refrigerator and Freezer Verification Program

## *Scope*

### ➤ Model Selection

- Random: 20% of basic models (minimum of 2) will be selected annually from each manufacturer. Goal is to select 20% of total Energy Star models
- Targeted: Supplemental models will be determined each year by governing body within AHAM based on stakeholder inputs
- Random selection: Selected by program laboratory
- Laboratory capacity issues

### ➤ Directory

- Online and available to the public
- Will include all certified internal volume and annual energy consumption values for each basic model
- Will act as the communications vehicle for re-rates, addition or deletion of models

### ➤ AHAM Mark

- Must be included, at a minimum, on the rating label

### ➤ Participants

- All manufacturers of refrigerators, refrigerator-freezers and freezers
- Not limited to AHAM members
- Voluntary program

# Number of Products Tested

- 20% of basic models per Licensee, with a minimum of 2, will be selected each year
- Random and targeted selection
  - X% random selection from all DOE product classes (presently 20%)
  - Y% targeted selection – ENERGY STAR basic models
    - AHAM will ensure that 20% of the models selected each year are ENERGY STAR models
    - EPA has opportunity to input product class, energy platform or model suggestions to AHAM for selection
  - Z% targeted selection – all other basic models
    - DOE and NRCAN have the opportunity to input product class, energy platform or model suggestions to AHAM for selection
- X, Y and Z will vary each year, depending on the number of ENERGY STAR basic models

# Verification Procedure

- Verify AHAM Mark is included on product as specified
- Run-in Period
  - Conducted in test chamber for 24 hours of compressor run-time
- Verification of internal volume
  - Manually completed by Program Lab
- Verification of annual energy consumption
- Completed using one test on one unit



# AHAM Refrigerator and Freezer Verification Program

## *Verification testing*

- Third party laboratory collects and maintains internal volume and annual energy consumption certification values for each Licensee
- Random unit selection
  - A single unit will be tested
- Determination of Internal Volume
  - Tolerance: < 2% or 0.05 cubic feet, whichever is less, of the certified value
- Determination of Annual Energy Consumption
  - Tolerance: < 105% of the certified value
- If compliance achieved, Verification report issued and values in Directory are unchanged
- If the test sample is found to be non-compliant, a specified process must be followed

# Notifications & Program Reports

- AHAM will notify appropriate regulatory agencies when Program non-compliance is confirmed
- AHAM will make test reports for non-compliant products available to appropriate stakeholders
- Directory
  - Updated weekly
  - Will contain all certified internal volume and annual energy consumption values for all models (basic and derivative)
  - Will list re-rates in addition to models added or removed from the Program
- Quarterly Reports
  - Listing of models tested
  - Number of basic models in the Program
  - Number of units tested
  - Number of first sample non-compliances
  - Number of non-compliant samples after one of the five options is chosen
  - Number of Licensees

# Summary

- Increased number of samples tested per year based on feedback
  - 20% of basic models, with a minimum of 2
  - DOE, EPA and NRCCan have opportunity to select models to be tested
- AHAM will ensure 20% of samples tested are ENERGY STAR
- Appropriate stakeholders will be notified within 90 days of a non-compliance
- Test reports for non-compliant products will be available to appropriate stakeholders

# AHAM Mark & Marketing Claims

- Licensees must include the AHAM Mark on the rating label on the inside of the refrigerator/freezer
- Licensees are encouraged to promote the Verification Program, ensuring the scope of the Program is appropriately communicated



# Finding of Non-Compliance

Licensee notified and provided with 4 options  
– one must be selected within 30 days:

Options	Action	Days to notification*	Max days to Resolution*
Option 1	<ul style="list-style-type: none"><li>• Request testing of additional products by the Program Laboratory</li><li>• All data must be supplied to Program Laboratory</li><li>• Total of 4 products tested</li><li>• Compare mean with upper control limit to determine compliance</li></ul>	90	190
Option 2:	<ul style="list-style-type: none"><li>• Challenge Program Laboratory</li><li>• Requires detailed written report, energy trace and calculation spreadsheet/protocol used by Licensee</li><li>• Program Lab will review and make determination</li></ul>	40	130
Option 3:	Add necessary components or modify factory process to ensure measured energy is within tolerance	30	90
Option 4:	Discontinue Model	30	30

➤ \*After original notification of non-compliance

# Challenge Procedure

- Within Program Licensees
- Must include substantial supporting documentation
- Program Laboratory determines if challenge is warranted, based on information received
- Confidentiality of challenger and challenged manufacturer will be maintained
- Challenged manufacturer may initiate an Expert Panel review if it disagrees with the testing results and provides sufficient documentation to support its case

# AHAM Refrigerator and Freezer Verification Program

## *Expert Panel*

- Three independent technical experts from outside the appliance industry
- Program Laboratory personnel and AHAM staff will serve as panel administrators
- **Qualifications:**
  - Experience in the reading and interpretation of test procedures;
  - Knowledge of refrigerator and freezer technology and current algorithms;
  - Independence from Licensees involved in the Program and policy impacts;
  - The capability to enter into a confidentiality agreement with AHAM and the Program laboratory
- **Responsibilities**
  - Review preliminary report from Program Lab regarding a challenge to an algorithm
  - Review preliminary report from the Program Lab on other unresolved challenges or non-compliance issues
  - Make a finding consistent with the DOE and NR Can test procedures by majority vote (2 out of 3).

# AHAM Refrigerator and Freezer Verification Program *Status*

- Strong AHAM member support
- Began August 2010
- Evaluation of program labs
  - Received proposals from four labs
  - Narrowed selection to two labs, using R-F DOE test procedure experience as primary requirement
  - AHAM and AHAM members conducted a thorough laboratory audit, including observing test set-up and internal volume measurement
- CSA chosen



# AHAM Refrigerator and Freezer Verification Program *Opportunities*

- AHAM strongly committed to this Program
  - Program provides ongoing random spot testing
  - Program lab personnel can provide independent guidance on technology changes, enabling AHAM and the government to act quickly on potential test procedure modifications
  - Opportunities for many stakeholders to become involved
- Continuing opportunities for government to review and comment on operations of Program

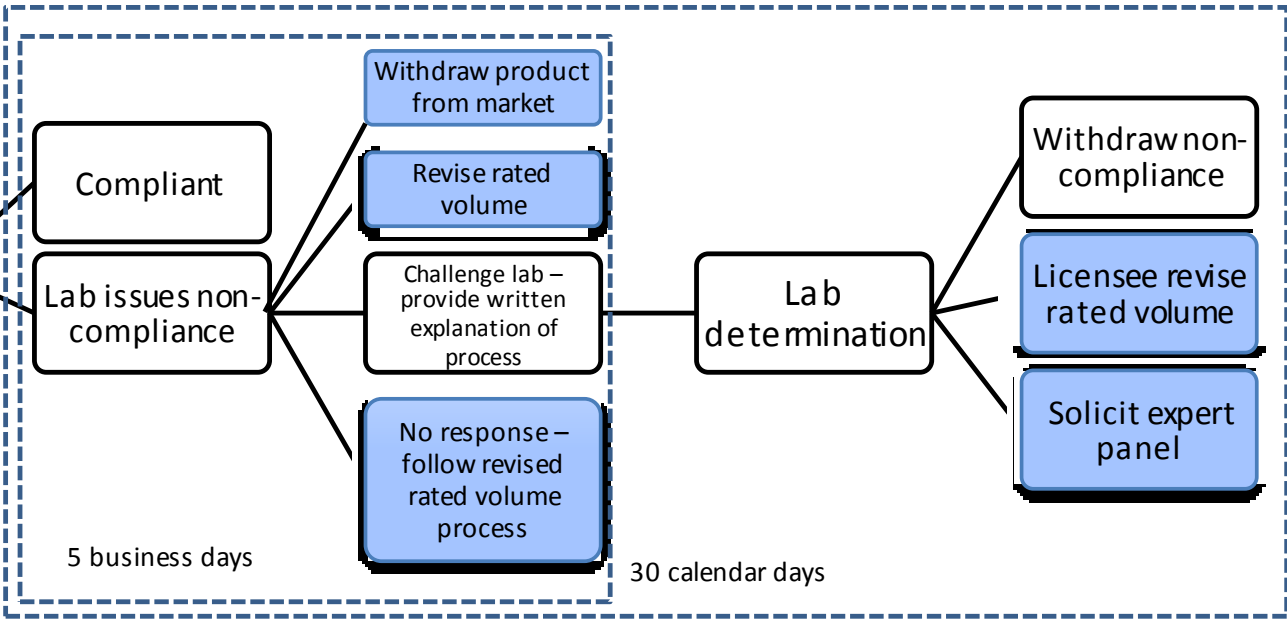
# Volume Non-Compliance

Lab Notification of Potential Non-compliance

Licensee confirms receipt of Potential Non-compliance (24 h)

Documented Interview

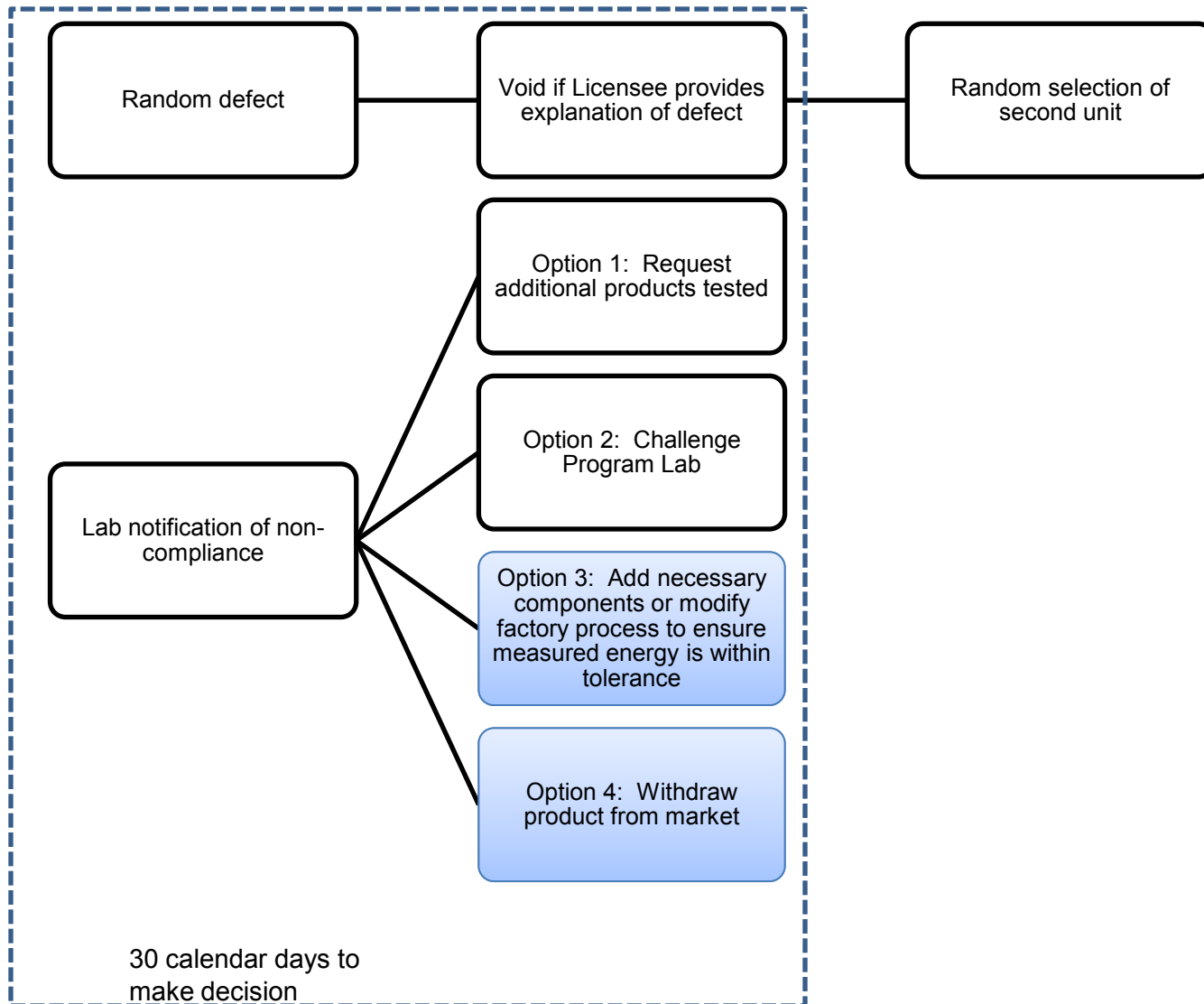
Lab determines volume second time



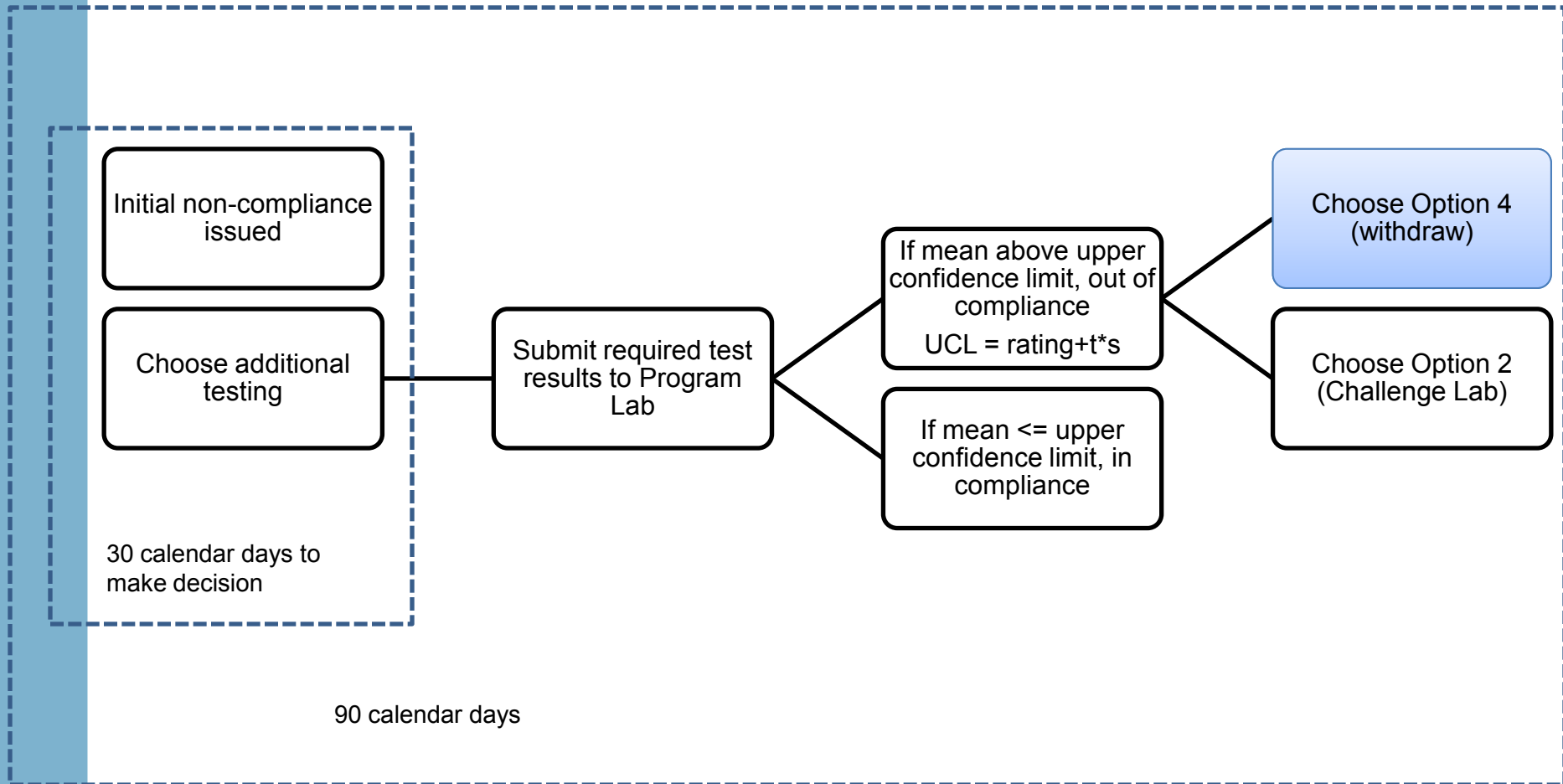
Appropriate government stakeholders notified



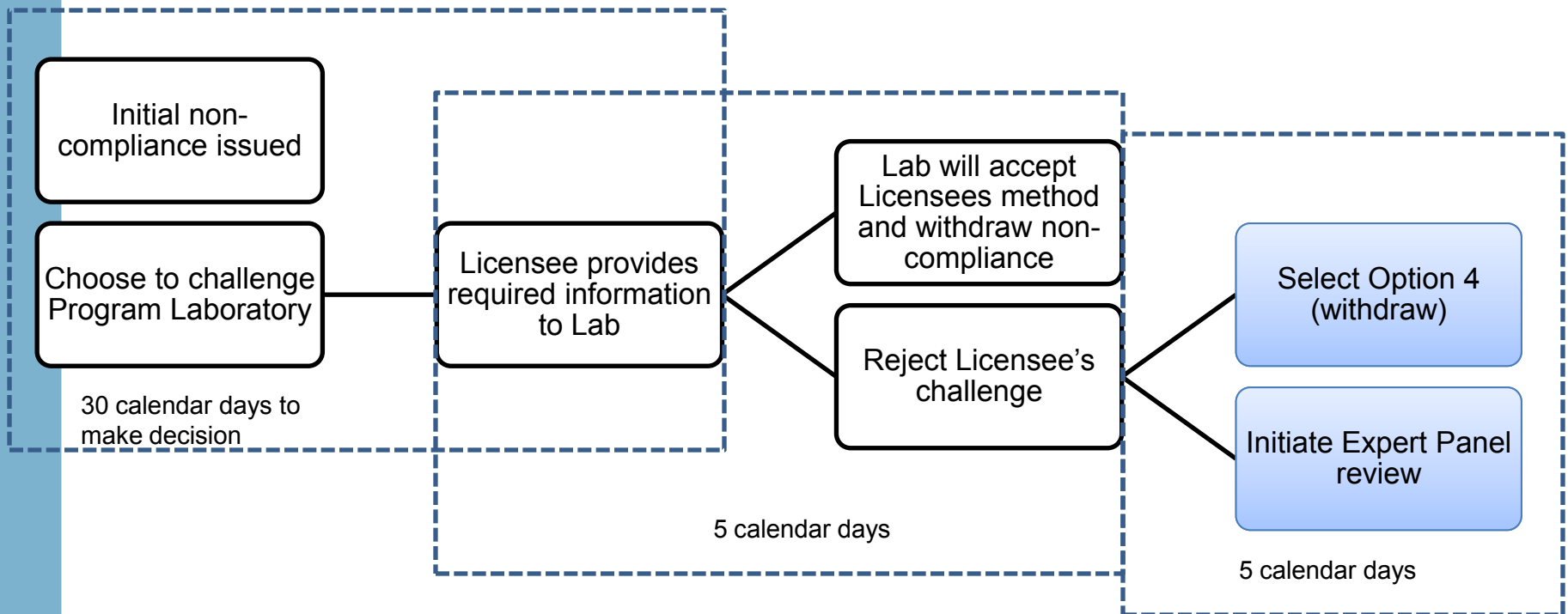
# Energy Consumption Non-Compliance



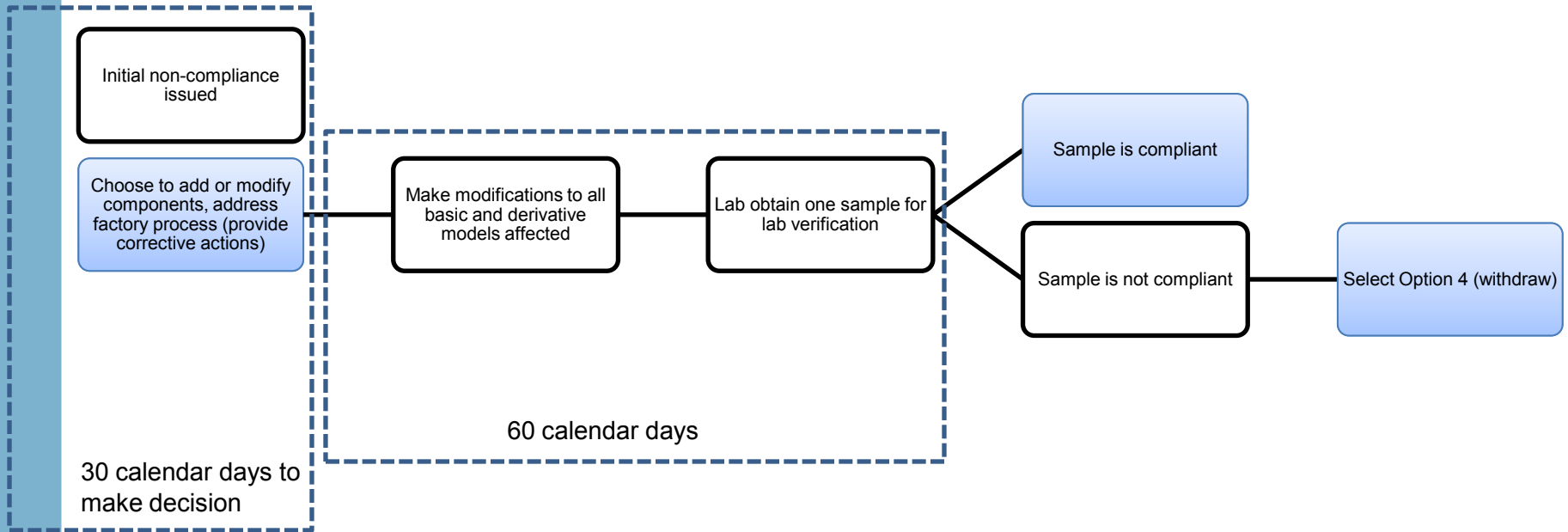
# Option 1: Additional testing



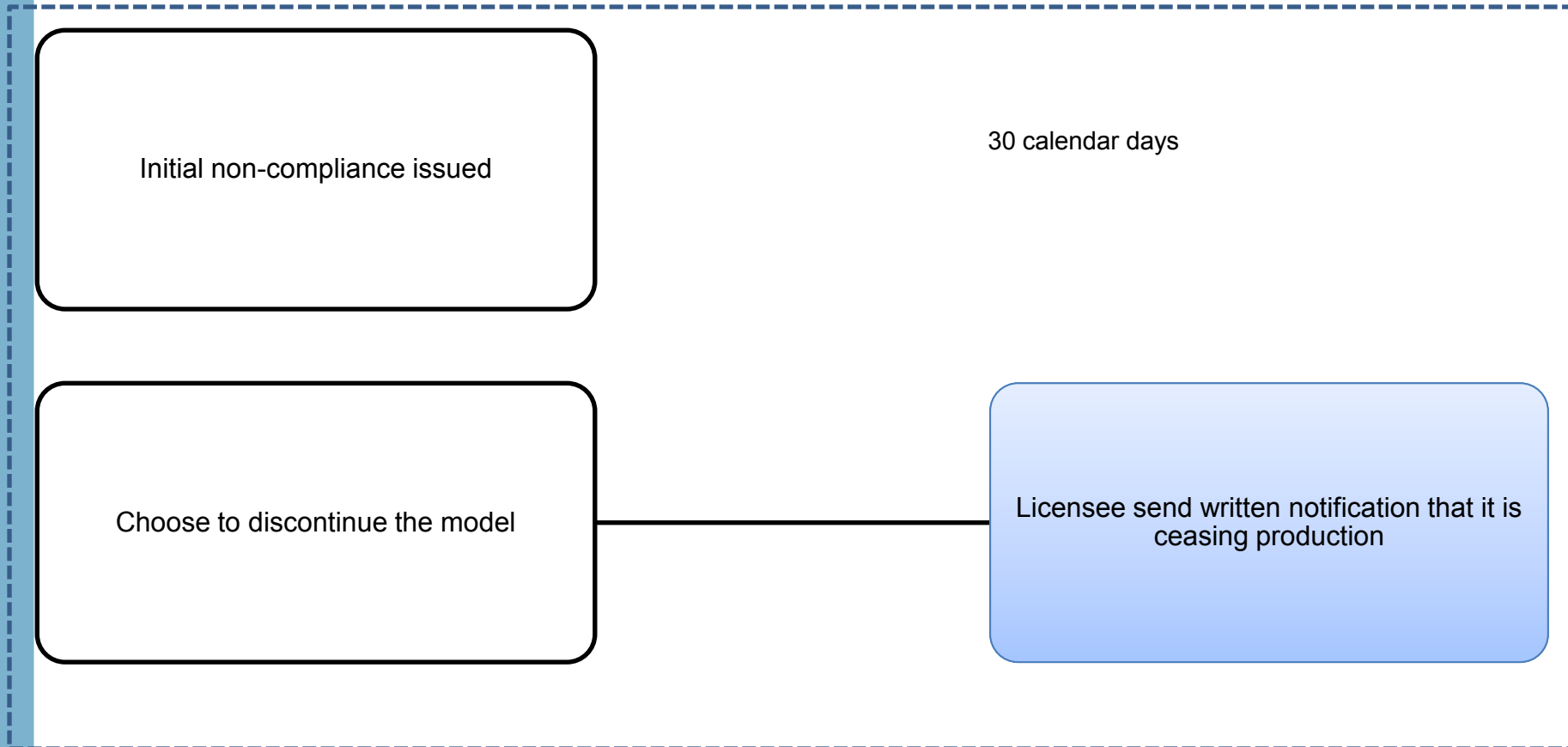
# Option 2: Challenge Program Lab



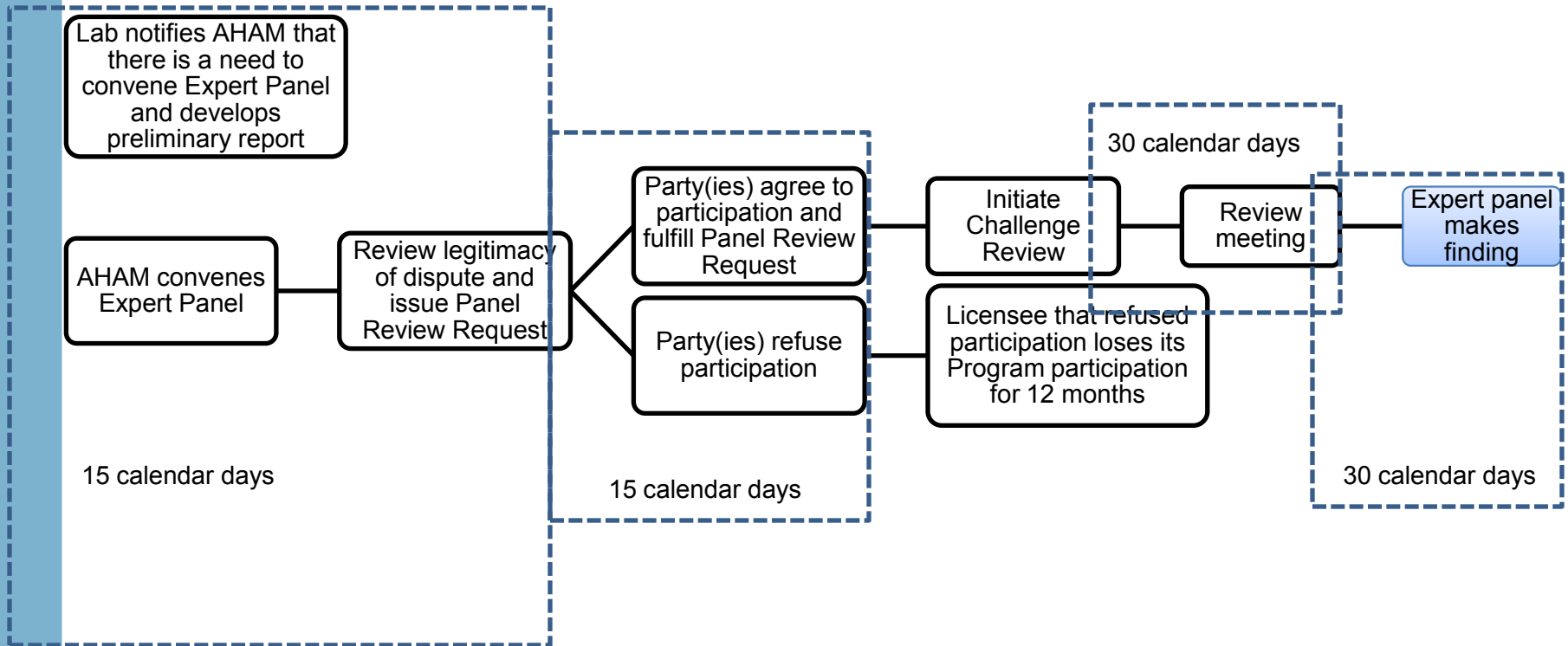
# Option 3: Modify components



# Option 4: Withdraw model



# Expert Panel





# Thank You.

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