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Fire Alarm Systems Level I Exam Blueprint

1.1 Installation Tasks – 60 % of exam

1.1.1 Properly install fire alarm system components.

Recognize use of codes and standards.

Understand and use basic terminology.

Recognize onsite hierarchy of authority.

Properly use hand and power tools (observing safe operation, manufacturer's recommendations).

Use proper installation techniques under supervision.

Describe operation of manual fire alarm boxes, automatic fire detection devices, audible signaling appliances, visible signaling appliances, annunciators

Follow instructions.

Read and interpret symbols and drawings pertaining to mounting devices

Recognize types of fire alarm systems (including electrical requirements, initiating devices, control functions, alarm indicating appliance, power requirements, signaling services and automatic detectors in use)

Use plans and specifications of jobs to calculate dimensions, type of materials, elevations, and locations.

Feed cables through access holes, roof spaces, and cavity walls to reach fixture outlets; then position and terminate cables, wires and strapping.

Mount and fasten control panels, sensors, and video cameras, and attach electrical and telephone wiring in order to connect components.

Assist in system acceptance testing

1.1.2 Practice correct wiring methods.

Properly use hand and power tools (observing safe operation, manufacturers recommendations).

Use proper installation techniques under supervision.

Recognize types of outlet and junction boxes

Recognize types of correct wiring, cable and conduit

Assist in acceptance tests as required

1.1.3 Practice Worksite Safety

Recognize unsafe conditions and alert supervisor.

Practice safe usage of hand and power tools.

Practice safe usage of worksite equipment.

Recognize common injuries or conditions (cuts, sprains, heat exhaustion, frost bite, fractured limbs, head injuries, heart attacks).

Apply basic first aid as required using updated techniques and work site first aid equipment.

Practice safe ladder usage.

Practice use of eye and hearing protection.

If applicable, verify location of materials safety data sheets (MSDS) information specific to the facility where work will be performed

Identify any hazardous locations specific to the facility where work will be performed

1.2 *Maintenance Tasks – 40% of exam*

1.2.1 Follow assigned maintenance standards and procedures.

Assist in reacceptance and general tests as required.

Read, understand and follow manufacturers published instructions for fire alarm system component operation and maintenance

Understand code requirements for maintaining equipment



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Fire Alarm Systems Level II Exam Blueprint

2.1 Submittal Preparation & Layout Tasks = 17% of exam

2.1.1 Apply project requirements to known occupancy type.

Read and identify common code requirements.
Communicate w/ supervisor to answer questions.
Apply project requirements to known occupancy type.

2.1.2 Apply contractual criteria to projects.

Read and interpret project specifications.
Prepare drawings.
Communicate with supervisor to answer questions.
Apply steps in acceptance of materials, components, and devices
Demonstrate familiarity with architectural, mechanical, electrical, structural & site plans

2.1.3 Coordinate with client on-site.

Read project specifications and determine basic scope of work.
Relay information pertaining to project specifications.

2.1.4 Verify site conditions for system application.

Collect information and verify floor plans.
Apply codes and standards using correct terminology
Inspect installation sites and study work orders, building plans, and installation manuals in order to determine materials requirements and installation procedures.

2.1.5 Assist in creation of shop drawing.

Apply standards under supervision.
Perform basic calculations.
Demonstrate good drafting techniques using standard design symbols
Prepare simple layouts to standard
Calculate quantity and number of fire detection devices required
Prepare materials lists from project specifications

2.1.6 Calculate power/battery and other requirements as requested.

Perform required calculations (battery calculations, electricity and voltage drop).
Calculate system overcurrent protection.

2.1.7 Identify codes and standards.

Find appropriate codes and standards as required by specific project or scope or work.

Follow correct steps in acceptance of materials, components, devices,

Recognize role of testing laboratories

Recognize methods for review and testing of fire alarm signaling equipment

Recognize and interpret principles and requirements of standards (system alarm initiating devices, system control functions, fire suppression systems)

Understand utilization of NRTL (Nationally recognized testing laboratories)

2.2 Installation Tasks = 32% of exam

2.2.1 Read plans.

Review plans applicable to the fire alarm system, including any changes, modifications, or special conditions and requirements that exist for the project.

Recognize the full scope of work and impact on project

Identify all types of new and existing fire alarm equipment and initiating devices.

Recognize relationships among construction industry construction industry trades, such as architectural, mechanical, electrical, and structural

Interpret other trades' site plans.

Recognize construction symbols and terminology.

Determine location of structural obstructions and mechanical systems

2.2.2 Apply installation strategy on-site.

Coordinate contract with project manager.

Communicate site conditions to supervisor during project.

Install manual fire alarm boxes, automatic fire detection devices, audible signaling appliances, visible signaling appliances, and annunciators

Install detectors and fire alarm signaling systems.

Define types of fire alarm signaling systems

Define operation and determine differences between noncoded, zone noncoded, coded, master coded, march time coded, zone coded, selective coded, voice alarm communication and evacuation.

Mount and fasten control panels, and perform functional terminations for electrical and initiation and NAC circuits, and telephone wiring in order to connect components. Recognize names and functions of fire alarm systems (including cabling requirements, initiating devices, control functions, alarm indicating appliance, type of power required, signaling services and automatic detectors in use)

Use standard plans and specifications of jobs to identify dimensions, type of materials, elevations, and locations

Feed cables through access holes, roof spaces, and cavity walls to reach fixture outlets; then position and terminate cables, wires and strapping

Mount and fasten control panels, fire alarm boxes, audible signaling devices, and attach electrical and telephone wiring in order to connect components

Properly use mounting devices.

2.2.3 Accept materials.

Coordinate ordering schedule with other trades or projects.

Communicate with supervisor need for materials.

Confirm delivery of materials (receiving and inventory).

Direct storage of delivered materials, on-site and off-site

Assure quality control process is followed from order placement to installation of equipment.

2.2.4 Properly install fire alarm system components.

Apply relevant codes and standards.

Apply conduit terminology.

Implement and execute plans for pulling cables, mounting devices, running conduit installation.

Calculate proper wire size

Calculate proper conduit size

Differentiate types of fire alarm systems (including electrical requirements, initiating devices, control functions, alarm indicating appliance, power requirements, signaling services and automatic detectors in use)

2.2.5 Start up the System and perform acceptance test

Define checklist criteria

Perform pre-power up checklist.

Use diagnostic tools, such as Ohmmeter, VOM, computer programs, to confirm power-up and operation of system components.

Follow manufacturers' specifications.

Monitor functionality and response of fire alarm system components

2.2.6 Use computer applications to program system.

Understand manufacturer's specifications for computer software programming

Perform site-specific programming.

Perform acceptance and reacceptance testing after programming

Follow and correct processing of alarm signals originating in alarm, through control panel to operate notification devices, correct operation of interfaced equipment and building systems.

Read basic schematics of coded and non-coded systems

Use programming tools to adjust sensitivity of units based on information provided in project specifications or by AHJ.

2.2.7 Troubleshoot system.

Perform equipment & circuit testing.

Use basic electrical and electronic tests for circuitry and component function.

Operate system controls.
Identify and correct fire alarm system troubles.
Test and inspect system to identify inoperable/undependable components.
Know characteristics of field service components
Use industry manufacturer's specifications for cleaning, checking, operating, adjusting system and/or components for continuing, maximum operability
Use diagnostic tools such as Ohmmeter, VOM and computer programs.

2.2.8 Identify and report on-site scheduling conflicts.

Establish communication with all project trades.

2.2.9 Perform system commissioning.

Implement established commissioning procedures.

2.2.10 Compile test completion data.

Provide content of test results in legible, industry format
Provide test results per fire codes standards/guidelines
Identify code deficiencies; inform owner/AHJ in writing

2.2.11 Create as-builts.

Prepare as-built documentation.
Maintain site records.
Perform mark-ups on drawings on-site
Use correct symbols and techniques.

2.2.12 Train Customer/End User

Articulate all pertinent training that needs to be learned by the customer/end user for the fire alarm system in accordance with the equipment manufacturer's specifications, and the AHJ, including approval authorities, location of system components, care and maintenance procedures.
Post instructions for the fire alarm system.
Document end user training.
Use appropriate communication format.

2.2.13 Apply fire-stopping practices.

Use fire-stopping concepts in areas such as fire doors, fire walls, partitions, etc.
Apply fire-stopping for wire penetration through walls and floors.
Implement required documentation of fire-stopping installation, sign off and AHJ approval.

2.2.14 Ensure Worksite Safety

Employ proven methodologies that minimize worksite accidents.
Employ specific safety standards and requirements.
Verify electrical safety at the project.
Observe proper worksite safety practices.
Perform safety inspections in industrial, manufacturing or repair setting

Prepare proper documentation.
Complete industry accepted report formats

2.3 Maintenance Tasks = 24% of exam

2.3.1 Follow applicable maintenance standards and procedures.

Verify equipment calibration.
Operate specialized test equipment.
Document results of tests.
Identify potential problems or failures and refer to supervisor.
Notify appropriate parties if impairments are revealed
Recognize the NEC and its application to fire alarm systems
Notify AHJ when system is impaired

2.3.2 Troubleshoot and repair system faults.

Reason analytically
Perform periodic equipment & circuit testing according to standards and/or manufacturer's specifications.
Use basic electrical and electronic tests for circuitry and component function.
Operate system controls.
Identify and correct troubles in the fire alarm system.
Identify potential issues and refer to supervisor.
Determine requirements and procedures for conducting tests per manufacturer's published instructions

2.3.3 Document procedures.

Prepare technical report.
Use industry accepted report formats and symbols

2.4 Education/Communication Tasks = 15% of exam

2.4.1 Train and mentor Level I co-workers.

Communicate standard business practices to subordinates.
Convey Codes/Standards Requirements to subordinates.

2.5 Management/Supervision Tasks = 12% of exam

2.5.1 Manage simultaneous projects on-site.

Coordinate project tasks.
Prioritize and communicate schedule to all stakeholders.
Gather pertinent MSDS information and ensure that all safety/OSHA regulations are adhered to.

2.5.2 Manage on-site manpower.

Coordinate tasking with staff on-site.

Communicate with on-site personnel.
Communicate manpower needs to supervisor.
Coordinate project timing and scheduling.

2.5.3 Oversee technical aspects of job on-site.

Operate computer (hardware/software)
Communicate with supervisor(s).
Recognize issues needing resolution.
Understand and know the scope of work.

2.5.4 Identify and report personnel issues.

Identify on-site personnel issues.
Recommend action to immediate supervisor.

2.5.5 Observe Rules promoting safe work environment

Distinguish between safe and unsafe practices
Instruct subordinates in maintaining safe work environment



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Fire Alarm Systems Level III Exam Blueprint

3.1 Submittal Preparation & Layout Tasks = 23% of exam

3.1.1 Analyze project requirements and determine if they meet the subject occupancy type.

Read & interpret codes

Communicate w/architect, engineer, client, AHJ, layout team to establish compliance needs.

Determine proper compliance with codes and standards

Determine interaction between fire alarm system and codes and standards

3.1.2 Review and implement contractual criteria.

Review plan for compliance with the AHJ and applicable fire and life safety code requirements.

Identify scope of contract to include equipment specified

Identify deficiencies in writing (e.g. in equipment specifications) and offer alternate/corrected design

Navigate through documents to find system requirements.

3.1.3 Coordinate with client

Communicate project requirements w/ stakeholders.

Apply the code and standard requirements to proper fire alarm system design installation, and testing.

Coordinate documentation with client.

Perform plan review with AHJ for compliance.

3.1.4 Coordinate with design professionals.

Establish means of coordination with all relevant personnel

Communicate with all design professionals to optimize selected system

Recognize role of Architect & Engineer & Construction Manager

Observe best practices of A/E

3.1.5 Identify site conditions.

Determine existing conditions and existing equipment (if applicable)

Establish contact with owner, end-user, AHJ, client or other authority.

Recognize occupancy types, codes, and standards for site visit and the proper criteria of system application, design, installation, and testing.

Recognize system limitations to site visit and findings.

Identify fire/life safety risks in the premises and fuel loads

Identify specific site conditions that might cause system problems such as excessive heat, cold, dust, or moisture

3.1.6 Identify AHJ or other Authority.

Identify all appropriate AHJ/agencies.

Establish communication with appropriate AHJ/agencies

Identify code enforcement requirements of specific AHJ/agencies.

3.1.7 Create shop drawing

Review drawings for compliance with manufacturer requirements & contract specifications.

Use and interpret computer aided design (CAD).

Use industry best practices to communicate with CAD operator

Document creation of shop drawing.

Ensure system compatibility between components.

Develop fire detection and signaling system architecture.

Research equipment specifications.

Prepare shop drawings for submittal to insurance authorities

Ensure conformity to manufacturer's installation instructions

Find appropriate codes and standards as required by specific project or scope of work

3.1.8 Calculate power/battery and other requirements

Use basic electronics to calculate power requirements and battery standby times for all types of fire alarm systems.

Calculate Ohms law and Kirschoff's law

Calculate voltage drop.

Calculate power requirements for proper equipment usage.

Calculate storage battery size for supply to given system for standby

Recognize required primary, secondary and trouble power supply sources

3.1.9 Read Specifications and drawings.

Apply advanced knowledge of adopted building codes and fire alarm standards to shop drawings for installation.

Interpret manufacturer's specifications for equipment operation and system installation.

Perform comparative analysis of requirements to manufacturers' specifications.

Read and identify discrepancies in specifications.

Apply drawing conventions

3.1.10 Research codes and standards

Direct subordinates in identifying appropriate codes and standards.
Review plan for compliance with the jurisdictions applicable fire and life safety code requirements.
Recognize special requirements of governmental agencies.
Identify any requirements for variances to the applicable codes.

3.1.11 Draft Written/Technical Reports

Apply fire alarms science and standards to technical report.

Review plan for compliance with the jurisdictions' applicable fire and life safety code requirements.
Develop correspondence for dissemination to stakeholders and AHJ.
Evaluate and follow standard business communications practices

3.1.12 Contract and Legal Duties

Identify qualifying conditions (limits of liability).
Interpret legal terminology

3.1.13 Create project schedule.

Establish communication procedure for all relevant trades.
Maintain updated files, including all changes, modifications and extras.

3.2 Installation Tasks = 25% of exam

3.2.1 Develop installation strategy.

Apply strategy for all phases of project from inception to AHJ approval.
Review drawings for compliance to manufacturer's requirements, contract specifications and applicable codes.
Identify correct detector classification, type, operating principles, quantities and location.
Apply installation strategies to the project schedule, including major tasks and deadlines.

3.2.2 Order materials.

Coordinate materials with job site schedule.
Confirm availability of materials to meet schedule.
Verify pricing, repair, replacement policies and technical assistance options.
Ensure pertinent technicians are familiar with products ordered.
Determine any changes made to product line since last ordered, installed, or used.
Verify compatibility issues and listings of products
Determine if any materials ordered have been recalled

3.2.3 Establish Guidelines for fire alarm system components.

Create plans for pulling cables, mounting devices, running conduit.
Satisfy the AHJ guidelines in each of these tasks.
Determine types of wire, cable, or conduit used in fire alarm system.
Define and use the correct method of field wiring system components.

3.2.4 Select computer applications to program system.

Determine how signals and system power are transmitted.

Assure that the proper software version is on site and that the programming technician is certified to operate that program.

3.2.5 Resolve on-site scheduling conflicts.

Communicate conflicts with stakeholders.

Implement written policies and procedures for conflicts.

3.2.6 Establish procedures for system commissioning.

Establish commissioning procedure in accordance with adopted building and fire codes and standards.

3.2.7 Document test completion.

Document function testing and completion in accordance with Adopted building and fire codes and standards and the AHJ

Distribute test/completion documentation to stakeholders.

Maintain documented evidence of testing.

3.2.8 Direct creation of as-builts.

Review development of as-builts.

Define necessary inclusions in as-builts

Define, measure, and document changes from original to as-built drawings.

3.2.9 Identify fire-stopping requirements.

Recognize need for fire stop

Know the characteristics and use of fire stopping materials

Ensure compliance with AHJ in application

3.2.10 Supervise worksite safety

Supervise and/or delegate supervision for work site safety.

Employ specialist if unfamiliar with management of all of the risks associated with a project.

Implement specific safety standards and requirements.

Maintain proper documentation.

Review all reported incidents.

Implement improvement in practice.

3.2.11 Interface with Other Systems and Trades

Read schedule to determine order of work

Contact other trades to coordinate project schedule among different trades

3.3 Maintenance Tasks = 18% of exam

3.3.1 Establish test procedures and standards.

Resolve issues reported by subordinates.
Determine requirements and procedures for conducting tests
Define and use periodic equipment and circuit testing procedures
Define methodology of tests for fire alarm system components and for fire alarm system

3.3.2 Oversee troubleshooting and repairing of system faults.

Resolve issues reported by subordinate.
Investigate feasibility of repair or replacement

3.4 Education/Communication Tasks = 16% of exam

3.4.1 Train and mentor Level I and Level II co-workers.

Communicate standard business practices to subordinates.
Convey Codes/Standards Requirements to subordinates.

3.4.2 Determine staff training needs.

Determine skill gaps.
Identify training opportunities.

3.5 Management/Supervision Tasks = 18% of exam

3.5.1 Manage simultaneous projects.

Coordinate project schedules.
Communicate scheduling to on-site staff.
Quantify progress and delays.

3.5.2 Manage manpower.

Coordinate with management.
Coordinate with other trades.
Communicate with project team(s).
Communicate manpower needs to management.

3.5.3 Oversee technical aspects of job.

Coordinate resolution of technical issues.
Identify proper application methods for codes, standards, specifications, and/or guidelines.

3.5.4 Resolve Interpersonal Conflict

Communicate with affected parties
Negotiate settlement of conflicts
Arbitrate disputes
Document procedures

3.5.5 Resolve ethics issues.

Review personnel issues and recommend action.

3.5.6 Oversee adherence to rules promoting safe work environment

Oversee adherence to safe practices

Alert proper authorities to unsafe situations

Instruct subordinates in ways to promote safe working environment

Recognize and correct unsafe work practices.

3.5.7 Monitor adherence to budgets.

Determine competitiveness.

Calculate preliminary budget estimate.

Review project expenditures.

Alert proper authorities to any change(s) and/or modifications to the scope of work.

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Fire Alarm Systems Level IV Exam Blueprint

4.1 Submittal Preparation & Layout Tasks = 26% of exam

4.1.1 Define occupancy and project requirements.

Demonstrate expert knowledge and application of codes, standards.
Consult w/stakeholders to provide expert knowledge of fire detection and signaling systems.

4.1.2 Determine or approve contractual criteria.

Ensure compliance with the AHJ and applicable fire and life safety code requirements.
Review plans for special environmental conditions.
Ensure deficiencies are documented along with any alternate/correct designs
Negotiate final contract
Identify in writing any inclusions or exclusions

4.1.3 Coordinate with client stakeholders.

Communicate project requirements with stakeholders.
Apply the code and standard requirements to proper fire alarm system design, installation, and testing
Coordinate documentation with client
Perform plan review with AHJ for compliance

4.1.4 Coordinate with design stakeholders.

Address role of Architect & Engineer & Construction Manager.
Negotiate schedule for on-time, on-budget project.

4.1.5 Resolve site visit findings.

Coordinate with owner/end user/AHJ/client, etc.
Apply occupancy types, codes, and standards to site visit for the proper criteria of fire alarm system application, design, installation, and testing.
Apply the equipment manufacturer specifications to site visit and findings.
Apply system limitations to site visit and findings.
Identify potential life safety risks in the premises and in fuel loads
Prepare written report identifying AHJ, applicable codes, existing equipment, estimated construction costs, required permits, fees, scope of project and time of project.

4.1.6 Confirm identity of AHJ or other Authority.

Verify and confirm identity of the AHJ or other authority for proposed scope of work.

Determine AHJ's interpretation and apply to project

Resolve code variance issues with governing authorities or approval agencies

Where applicable, provide formal request to AHJ for granting a code variance.

4.1.7 Review and approve shop drawing.

Review plan for compliance with the jurisdictions' applicable fire and life safety code requirements.

Review plan for compliance with project specifications and drawings.

Review and verify fire detection and signaling system architecture.

Communicate effectively with CAD operator to complete shop drawings

Prepare final documents including all changes and modifications to system(s)

Lay out evacuation system to assure adequate notification and direction of occupants.

Determine proper location of devices to optimize avoidance of nuisance alarms

Use recognized business practices

Research equipment specifications

4.1.8 Use results of power/battery calculations and system requirements.

Confirm and verify power requirements for optimal equipment use in accordance with adopted building and fire codes and standards.

Apply Ohm's law and Kirschoff's law

Apply calculations to ensure compliance with adopted building and fire codes and standards and AHJ guidelines.

4.1.9 Read Specifications and drawings.

Apply expert knowledge of adopted building codes and fire alarm standards to shop drawings for installation.

Review plans for compliance with the jurisdictions applicable fire and life safety code requirements to ascertain system or equipment connections.

Interpret manufacturer's specifications for system-wide operation.

Read and explain intent of specifications.

Resolve discrepancies.

Approve drawing conventions

4.1.10 Interpret codes and standards.

Ensure that plan complies with the jurisdiction's applicable fire and life safety code requirements.

Communicate with stakeholders and AHJ to confirm compliance.

Document any and all changes.

4.1.11 Write/Issue Technical Reports

Ensure that plans comply with the jurisdiction's applicable fire and life safety code requirements.

Document any and all changes.
Apply expert communication protocols in the dissemination of correspondence.

4.1.12 Confirm Legal Authority

Conform to legislated requirements of local, state and federal regulations.
Confirm and resolve project conditions.

4.1.13 Approve project schedule.

Confirm schedule and document completion.
Approve project schedule
Negotiate schedule to make sure all constraints are met. (for on-time, on-budget project)

4.2 Installation Tasks = 23% of exam

4.2.1 Approve installation strategy.

Coordinate and resolve design conflicts and related special circumstances.
Determine design features needed for severe environment (include unheated structures, structures subject to vandalism and/or physical abuse, structures subject to high humidity, corrosive or salty atmospheres)
Define methods to increase reliability and survivability (taking into account location of equipment, physical protection of system and components, proper wiring methods)
Perform hazard analysis to identify threats, including nuisance alarms
Select alarm equipment to deploy against threat.

4.2.2 Approve purchase order.

Determine material needs.
Issue purchase order.
Resolve major exceptions.

4.2.3. Review resolution of on-site scheduling conflicts.

Recognize liability and its application to performance and payment bonds, liquidated damages, hold harmless clauses, insurance coverage.
Negotiate procedure so as to eliminate source(s) of conflict.
Document conflicts, resolution and any third party assistance or intervention.

4.2.4 Develop written policies & procedures for conflicts.

Determine need for conflict resolution policies.

4.2.5 Review and approve as-builts

Use standard industry practices.
Distribute completed as-built to authorities as needed.
Coordinate with computer aided design (CAD) personnel.
Confirm accuracy of the as-built drawings.

- 4.2.6 Create Schedule of Work with Other Systems and Trades**
Coordinate interface with systems installation of other trades on site
Coordinate schedule(s) for physical installation

4.3 Maintenance Tasks = 15% of exam

- 4.3.1 Troubleshoot and Repair Faults**
Prepare written documentation of issues resolution
Prepare written rationale for replacement or repair decision.
Confirm that all issues, repairs and replacements have been resolved or corrected.

4.4 Education/Communication Tasks = 16% of exam

- 4.4.1 Train and mentor subordinates.**
Communicate standard business practices to subordinates.
Convey codes/standards requirements to subordinates.
- 4.4.2 Educate Staff.**
Develop training plan based on gap analysis.
Document results of training.
Create evaluation plan.
Provide formal training.
- 4.4.3 Present information verbally and in writing.**
Communicate clearly, verbally and in writing, using proper language.
Use appropriate communication format for audience.
- 4.4.4 Educate AHJs/Other Authorities**
Communicate clearly, verbally and in writing, using proper language.
Clarify, document, and interpret any issues to AHJ/other authority, both verbally and in writing.
Support code interpretations with research.
Provide updates to AHJ on latest technology available.
- 4.4.5 Interpret code language to laymen.**
Communicate, both verbally and in writing, ramifications of code adherence/non-adherence to owner, operator, design professionals, AHJs, and other concerned individuals/parties

4.5 Management/Supervision Tasks = 20% of exam

- 4.5.1 Oversee management of simultaneous projects.**

Develop schedule.
Communicate schedule and any changes to all stakeholders.
Coordinate schedule(s) to take advantage of economies of scale.
Establish communication channels with other trades to determine appropriate procedures.
Document change order, field installation changes, project completions.

4.5.2 Determine manpower requirements.

Identify scope of work to determine manpower needs.
Analyze labor requirements for each job, applying appropriate time elements and unit cost factors.
Engage required manpower.
Communicate with project leaders.
Document manpower decisions.

4.5.3 Write Response to RFP/RFQ

Articulate clear and coherent plan
Develop supporting budgetary information
Assemble team(s) to complete work
Review and analysis a bid package (including project manual, specifications, contract drawings, addenda, modifications, special instructions to bidders)
Interpret requirements of all local building codes and standards as they apply to project.
Detail and consider all special requirements that may affect cost and company liability (such as bonds, federal and state labor standards, affirmative action, Buy America clauses)
Identify and resolve conflicts between general specifications, mechanical specifications and fire protection requirements.
Review insurance requirements and effect on project costs

4.5.4 Oversee technical aspects of job.

Document issues and their resolution.
Read and interpret construction schedules, such as critical path
Separate fire protection project into categories to conform to general construction.
Identify computing needs.
Select and purchase computing equipment.

4.5.5 Resolve Interpersonal Conflict

Track any conflicts
Document results of conflicts

4.5.6 Review and document resolution ethics issues.

Review recommended action(s).
Document actions taken.
Establish communication channels with other trades to report on and conform to regulations (including federal, state and local law, affirmative action, Copeland &

Davis-Bacon, payroll affidavits, minority subcontracting, SBA programs, Executive Orders, tax considerations)

4.5.7 Create policies to ensure safe work environment

Create work environment safety policies
Create worksite safety policies
Convene regular safety review meetings
Document results of those meetings
Document all cases of safety violations, including resolution
Determine safety equipment needed for specific site

4.5.8 Develop and document budgets.

Negotiate budget.
Calculate final budget.
Prepare project cost breakouts for billing purposes
Prepare accurate requisitions.
Compute quantities of materials, applying appropriate standard cost factors.
Compute overhead.
Consider revenue factors, retention and progress payments
Review punch list items and final job completion with consideration of release of liens.
Negotiate any needed changes to budget.
Document all budget changes
Get subscriber to acknowledge all changes in writing

**Fire Alarm Systems Certification Examination Blueprint
Showing Percentage of Exam by Domains per Level**

Domains	Level I	Level II	Level III	Level IV
1. Submittal Preparation & Layout	0 %	17 %	23 %	26 %
2. Installation	60 %	32 %	25 %	23 %
3. Maintenance	40 %	24 %	18 %	15 %
4. Education/ Communication	0 %	15 %	16 %	16 %
5. Management/ Supervision	0 %	12 %	18 %	20 %