



**U.S. ARMY CORPS OF ENGINEERS**



# **DISASTER GUIDEBOOK**



## **TEMPORARY ROOFING**

Standard Operating Procedures  
May 2008

# Temporary Roofing 2008

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## **METL      Mission Essential Task List**

### Temporary Roofing PRT Mission

The mission of the Temporary Roofing PRT is to provide recovery support within established time and quality standards to the Federal Emergency Management Agency (FEMA) and impacted state, providing temporary roofing technical, or direct federal assistance per FEMA criteria to residences, hospitals and other structures that are being used as shelters.

### Mission Essential Task List (METL) Tasks

- Coordinate and execute all aspects of the Temporary Roofing response in the Area of Operations with Federal, State and local stakeholders.
- Provide a District managed PRT for cradle to grave response.
- Provide timely, accurate Essential Elements of Information (EEIs)
- Provide contract administration and quality assurance program for ACI contracts

### Intergovernmental Operations

All aspects of Temporary Roofing planning and operations will include the entire Project Delivery Team (PDT) in accordance with the USACE Project Management Business Processes (PMBP) as described in ER 5-1-11.

**Temporary Roofing PRT Mission Execution Checklist**  
**More detailed information is provided throughout the guide**

<b>Action</b>	<b>Responsible Member(s)</b>
Conduct Preparedness Activities to ensure team readiness	PRT members, Dist EM & CDR
Notify and Deploy PRT Management Cell to Area of Operations	PRT members, Dist EM & CDR
Establish Federal, State and local counterparts in AO.	PRT
Request and receive mission funding from FEMA	AO
Develop damage estimate by County, order FEMA plastic	AO, MM, ESF#3, FEMA, State
Order Right of Entry Forms from SAJ	MM
Establish priority of recovery by county	AO, MM, ESF#3, FEMA, State
Coordinate & develop Master / Project Management Plan for Operations	AO, MM coordinate with ESF#3, FEMA and State POCs
Establish EEIs and reporting procedures	AO, MM, MS
Identify and lease warehouse space to store blue roof plastic	LM, RE, MM
Notify ACI Contractor to mobilize, deploy and begin operations in AO	CS, KO, Res ENG
Notify and Deploy PRT Support Cell to Area of Operations	PRT
Select, Prepare and Deploy QA Team Members to AO	Dist EM
Establish Call in Centers, Operational ROOF BLU number	MM, SAJ
Establish, staff and operate ROE Collection Centers	MM, MS, QA, RE
Coordinate news releases with District, state and FEMA	AO, MM
Perform QA of ROE's	QA, QATL
Begin and maintain production rates for ACI contractor	Res ENG
Daily ROE's to contractor	QA, RES ENG
Maintain PRT Battle Rhythm	PRT
Coordinate VOLAG activities (AmeriCorps, National Guard, etc.)	AO, MM, MS
Develop exit strategy with ESF#3, FEMA and State / redeployment plan	AO, MM
Plan for transition to host district	AO, MM
Perform AAR and Update Temporary Roofing Guidebook/SOP	PRT

## **1.0 OVERVIEW**

This Standard Operating Procedures (SOP), Disaster Guidebook has been prepared for use during the 2008 Hurricane season for the Temporary Roofing Planning and Response Teams (PRTs). This SOP should be updated yearly to reflect lessons learned during the previous season, improvements in roofing procedures and changes to roofing policies. After review by the Proponent Division for Temporary Roofing it should be finalized and distributed to the PRTs prior to the start of the next season.

### **1.1 MISSION STATEMENT**

The Temporary Roofing Planning and Response Team (PRT) provides recovery support within established time and quality standards to the Federal Emergency Management Agency (FEMA) and impacted states, providing temporary roofing technical, or direct federal assistance per FEMA policy/criteria to residences, hospitals and other structures that are being used as shelters.

### **1.2 PURPOSE**

The purpose of the Temporary Roofing program is to shelter in place people with residences that have damaged roofs and provide temporary roofing to other structures as directed by FEMA.

Provide Technical Assistance

1. Advice on program execution, scoping
2. Assess conditions and capabilities of local governments
3. Provide training for others

Provide Direct Federal Assistance

1. Complete management of the Temporary Roofing Mission
2. Logistical support to other response groups (VOLAGs, National Guard, etc.)
3. Establish call in and ROE Collection centers

### **1.3 AUTHORITY**

Assistance is provided under the Stafford Act when state, regional and local resources have been exhausted / cannot respond. The state requests assistance in Temporary Roofing from FEMA. Under the National Response framework at FEMA's direction, USACE may provide technical or direct federal assistance in managing and contracting for the installation of blue plastic sheeting onto qualifying structures (See Section 1.4).

## **1.4 QUALIFYING CRITERIA**

Qualifying criteria for eligibility are established by FEMA, either in a National Eligibility Policy or by the local Federal Coordinating Officer (FCO) at the Joint Field Operations (JFO) office. A temporary roof is generally good for 60 days, but may last as short as 30 days.

Residential facilities (single family) with sloped roofs covered with asphalt or fiberglass composite shingles and:

1. Less than 50% of the deck is damaged
2. Less than 50% of the rafters are damaged
3. The structure is structurally sound and can provide safe shelter once plastic sheeting is installed.
4. Structures with flat roofs do not qualify. Currently tile roofs (clay, slate or asbestos (transite) shingles also do not qualify.
5. Federal facilities do not qualify for Temporary Roofing unless being used for Federal operations support.
6. Roofs with tree limbs or debris on the roof do not qualify (debris must be removed by others for the roof to qualify).
7. The structure must be located in an area designated / declared for Individual Assistance by FEMA.
8. Special situations may be submitted to the FEMA FCO for approval on a case by case basis.

## **1.5 REPAIRS**

Repairs by USACE contractors are primarily limited to the installation of plastic sheeting using wood furring strips nailed or screwed into the remaining roof surface. Contractors may include provisions for doing small roof repairs (100 square feet or less). Additionally, temporary repairs to roof decks and rafters in damaged areas may be provided to ensure a safe working area and to support the plastic sheeting. Repairs will be made only after a signed Right of entry Form has been provided by the owner or his/her designated representative. There is no cost to the homeowner under this program.

Generally the area to be covered with the plastic sheeting will be limited to the area of the damaged roof over the living area with enough coverage to prevent water from entering the living area. At the time of the event there may be a FEMA National Coverage Policy in effect. If not then the Action Officer will coordinate with the FCO at the JFO on a written coverage policy to be used for the event. Once the coverage policy is determined for an event it is distributed to all parties involved (contractors, Corps Quality Assurance (QAs) inspectors and any auditors.

## **1.6 RESPONSE VS. RECOVERY**

Temporary Roofing is a recovery mission. When life support / sustainment supply has stabilized, the priority will transition to roofing i.e. – progress during the initial response will be based on availability of assets not committed to response activities.

## **1.7 ROTATION, ACTIVATION AND DEPLOYMENT**

Rotation: The rotation of PRTs is maintained on ENGLINK. Rotational assignments are maintained until the PRT is deployed or removed from rotation at the request of the Division Commander due to direct involvement in response to events within their own Area of Operations (AO). Internal PRTs are always the first option for deployment within the Division AO (St. Louis District for MVD, Jacksonville District for SAD & Little Rock District for SWD).

Activation: PRTs are placed on alert when there is imminent threat that an event could result in FEMA mission assignments. The target date for alerting a PRT Team is D-4. The number of PRTs activated is dependent on the magnitude of the event. The PRTs should plan on traveling within 6 hours of notification.

Deployment: External PRTs will be deployed at the request of the supported Division.

1. Pre Declaration deployment involves the Management Cell (Action Officer, Mission Manager, 1 Mission Specialist (ROE Collection), 1 Resident Engineer and Contract Specialist). Note: The Contract Specialist is activated with the Management Cell to start activating contracts, but does not deploy until Post Declaration.
2. Post Declaration deployment involves the remainder of the team.
3. Teams will be staffed by their District from mission - cradle to transition.
4. A three day transition is required for incoming and outgoing PRT members.

## **2.0 TEAM ROLES AND RESPONSIBILITIES**

### **2.1 USACE TEMPORARY ROOFING PLANNING AND RESPONSE TEAMS (PRTs)**

Temporary Roofing Teams are located in Jacksonville, Omaha, Nashville, Little Rock and the St. Louis Districts. The Northwestern Division is the lead division for the Temporary Roofing program.

### **2.2 TEAM STAFFING AND CERTIFICATION**

Assigned PRTs will be staffed by their parent District / Division for cradle to transition of the temporary roofing mission. Individuals may be rotated within that period at the discretion of the parent organization. Normal deployment of PRT members is 45 days.

The deployment status of each team is listed on ENGLINK. This is only a guideline as teams should be prepared to deploy within their USACE Division boundary / multiple teams may be deployed to handle a multi-state response.

Teams transitioning should plan an overlap of at least 3 full days with the outgoing team to ensure all facets of the mission are well understood. A left seat, right seat approach is recommended.

#### Training Certification

1. Level 1. Encompasses the National Response Framework and Incident Command System Definitions, command and control and procedures. This is accomplished through individual training using on-line and CD support media. The training is provided and managed by the Readiness Support Center. The point of contact is Mr. Steve Diaz (251) 690-3165.
2. Level 2. Mission specific training which discusses the mission execution requirements and expectations. This is accomplished by individual training using on line and CD support media; however, actual field experience may be substituted for the Level 2 individual training. The criteria follows:
  - a. Deployed to support the Temporary Roofing Mission for 3 weeks or more.
  - b. No documented performance related issues or concerns.

3. Readiness Definitions. Rating is determined as outlined below:

<b>Tier 1</b>	<b>Green</b>	<b>Amber</b>	<b>Red</b>
Positions Filled	12	10	Less than 10
Positions Trained	10	6	Less than 6
<b>Tier 2</b>			
Positions Filled	10	6	Less than 6
Positions Trained	6	3	Less than 3

### **2.3 DEPLOYMENT TIMELINE**

Assistance is provided under the Stafford Act when state, regional and local resources have been exhausted / cannot respond. The state requests assistance in Temporary Roofing

- D-4 - Team alerted.
  - Team starts planning for deployment.
  - Team Members make plans for transferring work to others in their district.
  - Notify ACE-IT of any equipment and personnel needs.
  
- D-3 - Team continues to prepare for deployment
  - Team members hand off work to others in their district.
  - Receive any additional ACE-IT equipment for Management Cell
  
- D-2 - Four Members of Management Cell deploy (Action Officer to State EOC, Mission Manager, Mission Specialist (ROE) and 1 Resident Engineer to supported district.
  - Contract Specialist works on activating ACI Contracts from supporting District.
  
- D-1 - Management Cell starts to develop Mission Plan.
  
- D-0 - Management Cell continues work on Mission Plan
  
- D+1 - PRT receives post-declaration funding, prepares for movement.
  - PRT Receives remainder of ACE-IT equipment.
  
- D+2 - PRT deploys to event.
  - ACE-IT IM Technician deploys to link up with PRT.
  
- D+3 - PRT begins execution of mission.

PRT

<b>Title</b>	<b>Pre- Declaration Activation</b>	<b>Post Declaration Deployment</b>	<b>Total</b>
<b>Action Officer</b>	1	0	1
<b>Mission Manager</b>	1	0	1
<b>Mission Specialist</b>	1	1	2
<b>Contract Specialist</b>	1	0	1
<b>Resident Engineer</b>	1	1	2
Real Estate Specialist	0	1	1
Material Control Specialist	0	2	2
Data Report Manager	0	1	1
QA Supervisor	0	2	2
Admin Assistant	0	1	1
<b>TOTALS</b>	5	9	14

QA Team

<b>Title</b>	<b>Pre- Declaration Activation</b>	<b>Post Declaration Deployment</b>	<b>Total</b>
Quality Assurance Specialist	0	10	10

ACE-IT

<b>Title</b>	<b>Pre- Declaration Activation</b>	<b>Post Declaration Deployment</b>	<b>Total</b>
IM Technician	0	1	1
Data Report Manager*	0	1	1

\* May be requested through ACE-IT if PRT District cannot provide.

**2.4 TEAM POSITION ROLES AND RESPONSIBILITIES**

Action Officer:

Preparedness Phase:

- Coordinate with Home District EM & MM to establish team.
- Support and ensure that PRT receives training, is committed and prepared.
- Have documentation and other support items collected and ready to go.
  - SOP and sample Mission Execution Plan.

D-4 - Determine team status with home district EOC/EM.

- Contact impacted district, initiate coordination.
  - Alert PRT
  - Make sure ACE-IT has been notified of any equipment and personnel needs.
- D-3
- Receive deployment order and prepare.
  - Ensure Contract Specialist begins coordination with contract holding district (Works at home station).
- D-2
- PRT management cell deploys.
  - Touch base with PRT and ESF-3 TL
  - Ensure Contract Specialist continues coordination and contract evaluation.
  - Ensure ROE forms from Jacksonville EM are ready to ship.
  - Develop communications, PAO, Call-in plans.
- D-1
- Contact Mission Manager at supported district
  - Mission specialist develops ROE collection plan with Resident Engineer.
  - Coordinate Staffing Plan with Mission Manager and TL.
  - Develop POC list of local organization/government.
- D-0
- Coordinate ROE process with Mission Manager and Impacted District (including Call-in Center).
  - Meet with FEMA
  - Define Qualifying Criteria
    - Residences (homes)
    - Other Shelters (churches, shelters, auditoriums)
    - Historic Buildings
    - Federal/State/Local Interests
    - Economic/Political Interests
  - Confirm coverage standard
  - Use of a call-in center
  - Coordinate ROE locations (if they care)
  - Negotiate Last Day for ROE Collection
  - Meet with ESF #3 Team Leader and ATL to discuss expectations and SOP
- D+1
- Meet with the Corps PAO
  - Coordinate with Mission Manager
    - Define Reporting Criteria – Who briefs FEMA, RFO, and others.
    - What numbers and when to report for SITREPs, ESF TL, and FEMA.
    - What supplies to order and who will manage the VOLAGs.
  - Work with MM on Mission Execution Plan – Assess Damage – Create Assumptions
    - Identify Weaknesses/Risks
    - Elevate if Weaknesses/Risks are not addressed
- D+2
- Ensure that area is procured for plastic delivery

- Order Plastic – Track Burn Rates for each contractor – make sure this is done
  - Meet with FEMA roofing leaders, Logistics Leader (plastic), DRC Leader, PAO leader, VOLAG Leader, People to get hotels (if needed).
  - Maintain POC list – visit regularly
- D+3+ -Coordinate with the PRT to ensure FEMA funding is sufficient to continue mission.
- Work with MM on Close-out strategy.
  - Meet with MM on regular basis (air out ideas, concerns and help to prevent burn-out)
  - As schedule permits, go to RFO briefings, MM team meetings – stay plugged in.
  - Maintain contact lists for MM, ESF #3 TL, and ATLS, contractors, plastic sites, material handling personnel (cell #'s), State EOCs, Call-in Center, Call-in Center support staff, RFO, RFO staff, Reach Back to Home District, Reach Backs to Impacted District, FEMA FCO, PAO, DRC, FAC & JFO.

Mission Manager:

The Mission Manager serves as project manager for the temporary roofing mission, acts as primary POC for commander, impacted district, home district, PRT and resident engineer. The Mission Manager coordinates the execution of the roofing mission, throughout the life of the mission response.

- D-4 - Determine team status with home district EOC/EM.
- Contact impacted district, initiate coordination.
  - Alert PRT
  - Make sure ACE-IT has been notified of any equipment and personnel needs.
- D-3 - Receive deployment order and prepare.
- Ensure Contract Specialist begins coordination with contract holding district (from home office).
- D-2 - PRT management cell deploys.
- Touch base with impacted district
  - Contract specialist continues coordination and contract evaluation.
  - Coordinate team gear needs and pack gear/equipment.
  - Ensure ROE forms from Jacksonville EM are ready to ship
  - Develop communications, PAO, Call-in plans.
- D-1 - Contact Action Officer at ERT-A.
- Mission specialist develops ROE collection plan with Resident Engineer.
  - Develop staffing plan for mission.
  - Develop POC list of local organization/government.
- D-0 - Refine right of entry plan.
- Refine plastic drop sites based on damage area.

- Refine staffing plan to account for available lodging in impacted area.
  - Develop internal communication plan with impacted district, upward reporting, SITREPS (battle rhythm).
  - Review QA training plan with Resident Engineer or QA Supervisor.
  - Review database status and availability.
- D+1
- Assists in contract task order development.
  - Coordinate with Contract Specialist and impacted district Contracting Officer.
  - Coordinate execution of PAO plan, ROE collection plan, develops staffing plan.
  - Coordinates deployment of 2<sup>nd</sup> wave of PRT. This group includes Real Estate Specialist, QA Supervisors and ten (10) QA's
  - Identify admin person from one of the ten QAs or "reach back".
  - Coordinates "turn on" of call-in center with Jacksonville EOC and PAO.
  - Assess potential plastic staging sites.
  - Assess potential Resident Engineers' sites.
  - Coordinate with impacted district additional QA requirements. QAs may be obtained through EngLink Taskers or AE Contract.
- D+2
- Assist in locating Resident Engineers' office.
  - Coordinate plastic ordering from FEMA.
  - In-process 2<sup>nd</sup> wave of PRT.
  - Award contract and issue notice to proceed (NTP).
- D+3
- Set up right of entry stands.
  - Coordinate distribution of ROE forms to sign up stands and call-in center.
  - Notify PAO, update website (public), notify call-in center to update message.
  - Coordinate Training of QA's with QA Supervisor.
  - Activate Database.
  - Secure site for plastic staging.
- D+4
- Secures Resident Engineer(s) office.
  - Coordinate Resident Engineer office equipment needs with RFO/supported district.
  - Coordinate pre-construction meeting (include Safety officer).
  - Conduct ROE assessment/estimate.
  - Plastic arrives at staging area.
  - Refine staffing plan-assess needs.
- D+5
- Through out Mission Execution
- Continues to coordinate personnel needs to staff mission.
  - Continues to coordinate plastic needs based on database evaluation.
  - Continues to coordinate with Resident Engineer on contractor concentration based on damage area(s).
  - Utilize database information to query ROE totals, roofs installed, contractor workload. Report information to team and upward to Commander, Action Officer, supported district, home district, UOC as needed.

Mission Closeout- Planning for mission closeout starts when the ROE collection begins. The effort continues through completion of construction. The mission will be transferred to the supported district by the PRT when the supported district is able to take control. Transfer can occur prior to completion of mission.

Mission closeout responsibilities:

- Assists Resident Engineer in final pay estimates.
- Coordinates final database accounting
- Accounts for status of all personnel both still deployed and those already returned home. Updates EngLink on personnel status.
- Accounts for all equipment assigned to roofing mission.
- Closeout all real estate leases and equipment rentals.
- Coordinate mission transfer to supported district.

Mission Specialist:

The Mission Specialist (MS) assists the Mission Manager with management of PRT. The ROE MS is responsible for coordinating with the Resident Engineers in collecting rights of entry and Database Manager in data management. The MS be able to pull information from database and create reports on mission status. They perform other duties as assigned by the Mission Manager in support of the Mission.

- D-4 - Coordinate with Mission Manager on team status. Reports to home district EOC.
  - As directed by Mission Manager, contact team members and supported district for logistical and reporting information.
- D-3 - Receive deployment order and prepare.
  - Coordinate with Contract Specialist on status of contract and contractor availability.
- D-2 - PRT management cell deploys.
  - Coordinate with Mission Manager and home district EOC on team gear and equipment needs.
  - Make initial contact with Jacksonville EOC regarding delivery of ROE forms.
  - Assist in development of communication plan, PAO and call-in center plan.

- D-1 - Develop ROE collection plan with Resident Engineer.  
- Assist in development of Mission Execution Plan.  
- Assist in development of POC list for teams and locals.
- D-0 - Assist in refinement of staffing plan based on damage area(s).  
- Review QA training plan with Mission Manager and Resident Engineer.  
- Review database status.
- D+1 - Assist Mission Manager in contract award.  
- Assist Mission Manager in execution of PAO plan, ROE collection plan, refine staffing plan.  
- Coordinates deployment of 2<sup>nd</sup> wave of PRT (including Real Estate Specialist, QA Supervisor and 1<sup>st</sup> 10 QA's).  
- Assist Mission Manager in "turn on" of call-in center.
- D+2 - Assists the Real Estate Specialist in locating Resident Engineers' offices and plastic staging area.  
- Secure site for plastic staging.  
- Assists the Mission Manager and Action Officer in ordering plastic sheeting from FEMA.  
- Assists the Mission Manager and admin person with in processing 2<sup>nd</sup> wave of the PRT.  
- Continues database management and reporting.
- D+3 - Set up right of entry stands.  
- Coordinate distribution of ROE forms to sign up stands and call in center.  
- Notify PAO, update website (public), and notify call in center to update message.  
- Assist, if needed, in training of QA's. Procure training materials if needed.  
- Continue database management and reporting. Note: Requires actual ROE data to input into database.
- D+4 - Assist with set-up of Resident Engineer offices. Coordinate equipment needs with supported district.  
- Assist Mission Manager and Contract Specialist with set-up of pre-construction meeting.  
- Assist Mission Manager and team with initial ROE assessments and estimates utilizing ROE database.  
- Refine staffing plan with Mission Manager.  
- Assess QA needs. .
- D+5 Through out Mission Execution  
- Continues to assist Mission Manager in coordinating personnel needs to staff mission.  
- Continues to assist Mission Manager in coordinating plastic needs based on database evaluation.

- Continually works with Database Manager to review reports from ROE database.
- Utilize database information to report EEIs

#### Mission Closeout-

Planning for mission closeout starts when the ROE collection begins. The effort continues through completion of construction. The mission will be transferred to the supported district by the PRT when the supported district is able to take control. Transfer can occur prior to completion of mission.

#### Mission closeout responsibilities:

- Assists Resident Engineer in final pay estimates.
- Coordinates final database accounting
- Accounts for status of all personnel both still deployed and those already returned home. Updates EngLink on personnel status.
- Accounts for all equipment assigned to roofing mission.
- Closeout all real estate leases and equipment rentals.
- Coordinate mission transfer to supported district.

#### Contract Specialist:

The Contract Specialist is responsible for coordinating and drafting all contract requirements for the mission. The Contract Specialist works directly for the Mission Manager.

D-4 Team alerted.

- D-3
- Begins coordination with team members.
  - Reviews contract requirements.
  - Transfers work load to other district members.

- D-2
- Placed on Pre-Declaration funding as part of the Management Cell, but remains in home district to perform critical ACI Contract work.
  - Gets ready to deploy to include equipment and personal items.
  - continue to review contract requirements and coordinate with potentially impacted district.
  - Determine the details on contracting actions between yourself and the impacted district.
  - Works with Resident Engineer to contact contractors for pre-award coordination, i.e. make contractor aware of a potential award and allow them the opportunity to begin preparation of submittals such as Safety and QC Plans as well as begin staging plans. This is prior to award and funding of any task orders so this is not a meeting to require the contractor to begin work (i.e. spend funds), only to give them a head's up to begin coordination.

- Develop any other mission contract actions in coordination with team members (material handling equipment, etc).
- D-1
  - Draft Task Order.
  - Coordinate with PRT.
  - Develop any other mission contract actions in coordination with team members.
- D-0
  - Continue to coordinate with PRT.
- D+1
  - Get deployment order.
  - Coordinate with forward team members and impacted district to finalize task order requirements.
  - Coordinate any loading requirements with material control specialist and impacted district.
- D+2
  - Deploy forward.
  - Award Task Order (impacted district).
  - Notice to Proceed.
- D+3
  - Continue to develop contract requirements with team and closely coordinate with Resident Engineer(s) and impacted district Contracting Officer.
- D+4
  - Pre-construction meeting (w/ Safety Office)
- D+5
  - Provide ongoing support to PRT.

Resident Engineer:

Responsible for executing temporary roofing contracts; in addition to the management and supervising of assigned personnel.

- contract administration,
- quality assurance
- reports/documentation.
- Contractor compliance/execution with all aspects of contract

- D-4
  - Team alerted.
- D-3
  - Receive deployment order.
  - Get ready to deploy to supported District.
- D-2
  - Travel to supported District
  - Pre-award coordination. Ensure that the contractor is aware of a potential award and allow them the opportunity to begin preparation of submittals such as Safety and QC Plans as well as begin staging plans. This is prior to award and funding of any task orders so this is not a meeting to require the contractor to begin work (i.e. spend funds), only to give them a head's up to begin coordination.

- Work with supported District for potential QA inspectors
  - Coordinate with home district emergency management and contact QAS from home district to be on alert
- D-1 - Work on staffing plan with MM.
- Plan organization of RE office for ROE handling, database entry and coordination with Contractor.
- D-0 - Review QA training plan and implementation.
- D+1 - Work with Contracting Specialist to get funding and award of multiple contracts to begin work. Coordinate locations/zones for each contractor to work based on field assessments.
- Work with PRT on locations of staging areas for plastic delivery and RE office locations.
  - Work with contractors to make sure they have appropriate staging areas for their work and that they are close to our RE office locations as appropriate.
- D+2 - Notice to Proceed
- Coordinate with ROE MS (begin assessments with arrival of first ROEs)
  - Train QA inspectors for estimates and finals and set up plan for training incoming QAs.
- D+3 - Move to RFO and RE Office Locations
- set up office and organize incoming ROEs, database, data entry
- D+4 - Pre-construction meeting (w/ Safety Office)
- QA assessments
- D+5+ - Continued Operations
- Provide reports to Mission Manager on a daily basis.
  - Participate on conference calls as required.
  - Coordinates complaint resolution with Mission Manager.
  - Supervises QA Supervisors, Team Leaders and inspectors and other personnel associated with the Resident Office.
  - Verify and sign time sheets as required.
  - Resolve personnel conflicts elevated above the QA Supervisor.
  - Continually monitor staffing requirements and report to Mission Manager the need to acquire more QAs or to move QAs to another mission.
- D+6 - put on first roof (assuming plastic is available)

Real Estate Specialist:

Provides oversight on right of entry collection centers and will acquire, manage and dispose of Real Estate interests in support of the roofing mission. The Real Estate

Specialist reports directly to PRT Mission Manager. Coordinates warehouse or storage area for plastic sheeting with Mission Manager and Resident Engineers.

Material Control Specialist:

Responsible for receiving and issuing government furnished material (GFM) (plastic sheeting) and other mission materials to the prime contractors. This includes tracking, accountability, and reporting to Mission Manager the status of materials. Coordinate the material handling equipment requirements: such as a forklift, operator (if needed) and pallet jack. Be able to supervise the safe use of forklifts and be licensed to operate a forklift if needed.

- D-4 - Team alerted.
- D-3 - MCS begins coordination with team members.
  - Coordinate with the impacted district and review potential government and other federal locations for staging of roofing materials.
  - Plan for a secured site large enough that can accommodate storage of at least 20 truckloads of plastic, traffic control, office space, off-loading and loading trucks. This can be a warehouse (around 10,000 sq ft) or open site (at least 2 acres) etc.
- D-2 - Get ready to deploy to include equipment and personal items.
  - Continue to coordinate the GFM staging areas.
- D-1 - Coordinate the GFM staging area with impacted district.
- D-0 - Continue to coordinate with forward deployed team members.
- D+1 - Get deployment order.
  - Coordinate with forward team members (Contract Specialist) and impacted district to finalize staging areas and contracts for loading requirements.
  - Coordinate with PRT regarding the ordering and delivery of initial plastic.
- D+2 - Deploy forward.
- D+3 - Coordinate with Mission Manager and FEMA logistics regarding GFM.
  - Finalize the staging areas with PRT.
- D+4 - Start receiving and issuing GFM.

Data Report Manager:

Responsible for the input of content and maintenance of the Right of Entry database. Also included are daily reporting requirements and exception reports (for duplicate information).

Information Management Technician:

Responsible for Information Technology requirements to keep the team equipment and software programs operational.

QA Supervisor:

Responsible for supervising up to 7 Lead QA inspectors in executing all temporary roofing contracts, including:

- Quality assurance
- Reports and documentation.
- Contractor compliance and execution of contract

D-4 - Team alerted.

D-3 - Begin coordination with team members.  
- Reviews contract requirements.

D-2 - Get ready to deploy to include equipment and personal items.  
- Continue to review contract requirements.

D-1 - Coordinate with Resident Engineer and others in the PRT.

D-0 - Continue to coordinate with PRT

D+1 - Get deployment order.  
- Coordinate with PRT and Home EM office to see if any supplies are needed down range.  
- Review QA training plan and implementation

D+2 - Deploy forward.

D+3 - Train incoming QA inspectors in mapping program, estimating and finalizing ROEs for payment.

D+4 - Pre-construction meeting (w/ Safety Office)  
- QA assessments  
- Move to RFO and EFO Locations

D+5+ - Continue Operations. Be flexible.

- Organize QAs into seven (7) person teams and assign team leaders for up to seven (7) teams per QA Supervisor.
- Plan and assign work for QA inspectors on a daily basis.
- Resolve problems with Contractor concerning ROE estimates and installation of blue roof.
- Resolve problems with home owners or assign QA to contact homeowner.
- Work with Office Manager/Database Manager to organize ROEs and distribution to Contractor.
- Assist Resident Engineer with other duties as assigned.

Subject Matter Expert (Designated by NWD):

Preparedness Phase

- Assists lead division in maintaining Mission Guides, SOPs, and Advanced Contract Initiatives (ACI).
- Assists lead division and USACE Readiness Support Center (RSC) to develop annual training program.

Activation Phase

- Deploys as a member of the Emergency Support Function (ESF) #3 Management Team to serve at various FEMA operational locations: the Emergency Response Team, Advance (ERT-A) at the state EOC; to the National Resource Coordination Center (NRCC); the Regional Response Coordination Center (RRCC); or the Joint Field Operations Center (JFO).
- Serve as a member of the ESF #3 Team Leaders staff and assist in mission analysis, developing mission assignments, advising on potential obstacles and necessary state and local coordination. Works with the PRT Action Officer or Mission Manager in resolving issues.
- Assist in developing the Mission Execution Plan that includes a Staffing Plan, ROE Collection Plan, Communications Plan, QA Training Plan, and Database Management Plan, and Transition/Close-Out Plan.
- Assist in changes to mission assignments, anticipate changes to execution plan. Work with the Action Officer and Mission Manager in resolving issues.

## 2.5 EQUIPMENT NEEDS FOR PRT

The following items should be acquired and made available to the PRT for deployment. A 60 day supply of printer / multi function equipment ink cartridges and batteries would also need to be deployed with the team.

Nomenclature	Number needed
Laptop Computer	14
Cell Phones	14
USB 2 GB Thumb Drives	14
Copier, Scanner, Printer, Fax multifunction	3
Global Positioning System (GPS)	14
Digital Camera	14
Connectivity to CEEIS	14

### 3.0 ESTABLISHING OPERATIONS AND TIMELINES

**Mission Assignment Scripts:** A mission assignment is a Work Order issued by FEMA to USACE directing completion of a specific task that is given in anticipation or response to a major disaster or emergency. Listed below, these scripts, entered on FEMA Form 90-129 provide authorization to expend funds in support of the emergency. Verbal mission assignments from FEMA should be documented and signed by USACE and FEMA representatives, and be followed by a written mission assignment.

#### 3.1 PRE DECLARATION MISSION

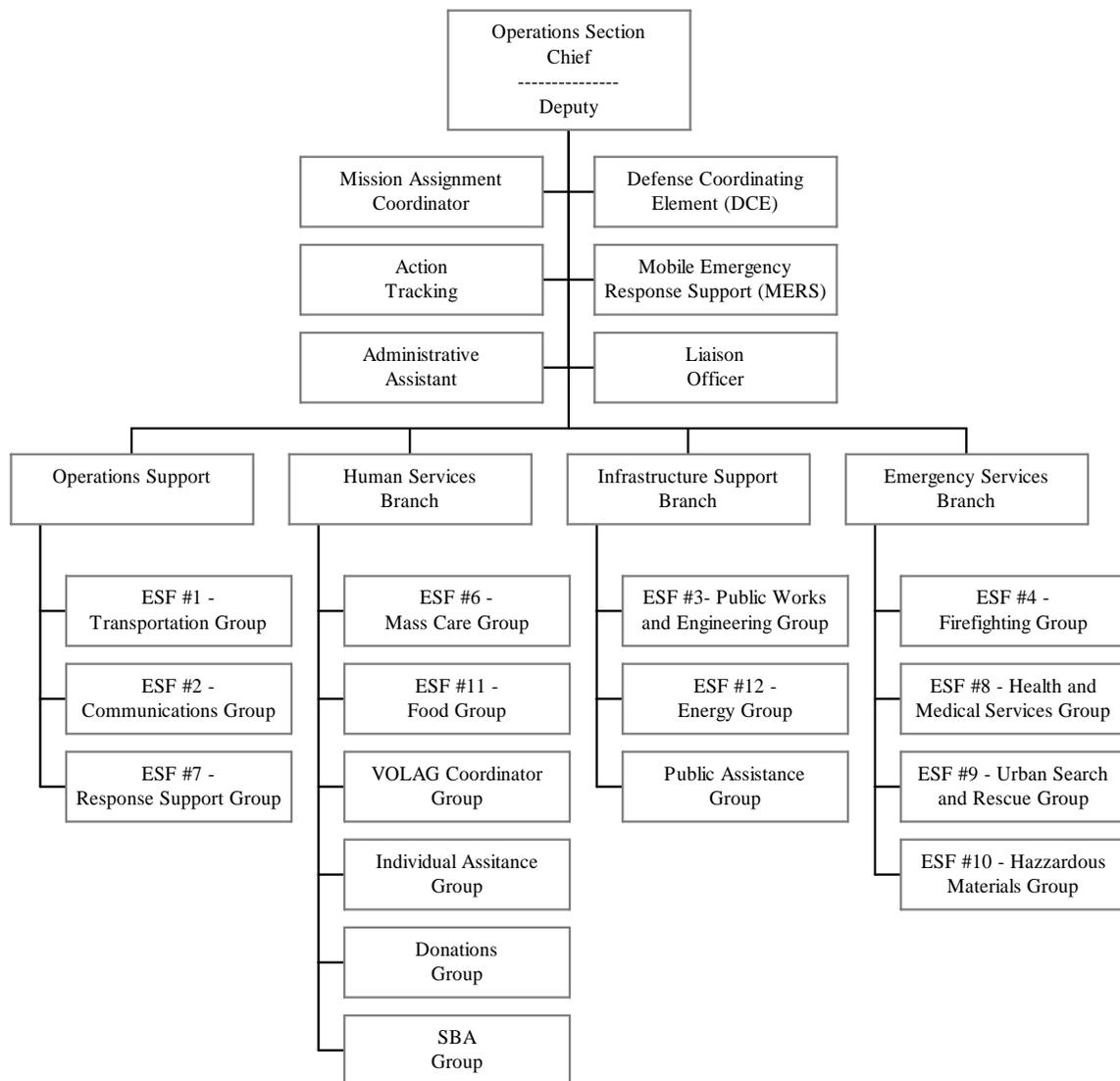
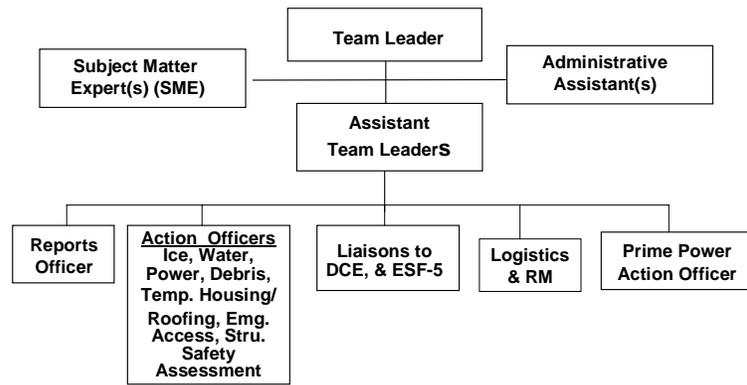
**Pre-Declaration Mission Assignment Script.** Activate and pre-position the management element of the Temporary Roofing Planning and Response Team (PRT) to provide for event specific planning and preparation for temporary roofing as directed by FEMA. Prepare to implement the Advanced Contracting Initiative (ACI) or other contracting process that will permit the award and execution of contracts for temporary roofing support once a declaration is made. A subsequent mission assignment will be issued if necessary for all post-declaration temporary roofing activities. Orders for roofing quality plastic sheeting will be placed through or by FEMA logistics. Estimated cost is \$50k (Previously \$25k).

#### 3.2 POST DECLARATION MISSION

**Post Declaration Mission Assignment Script.** Activate and deploy the Roofing Planning and Response Team (PRT) to provide temporary roofing support as directed by FEMA. Implement the Advanced Contracting Initiative (ACI) or other contracting process to provide temporary roofing. Coordinate the roofing activities of all organizations performing portions of the roofing mission (National Guard and private Voluntary Organizations). This may include supplies, equipment, materials and logistics support necessary to provide temporary roofing to homes, hospitals, public facilities and other structures (real estate support necessary for Rights of Entry and leasing information may be necessary. Orders for roofing quality plastic sheeting will be placed through or by FEMA logistics. Estimated initial cost is \$3 million.

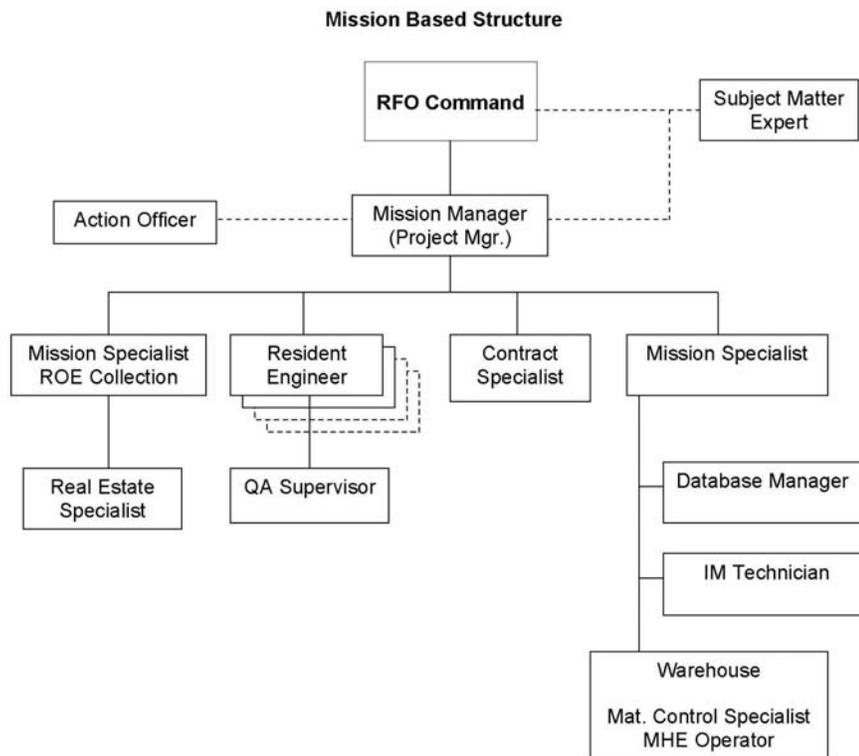
#### 3.3 JOINT FIELD OFFICE

**Joint Field Office.** A temporary federal facility established locally to provide a central location for Federal, state, local and tribal executives for incident oversight, direction, and/or assistance to effectively coordinate protection, prevention, preparedness, response and recovery actions. The ESF#3 Action Officers work as staff officers, planning, managing and executing the mission for the USACE Team Leader and Assistant Team Leader at this location. The ESF#3 and JFO Structure Diagrams are as shown below:

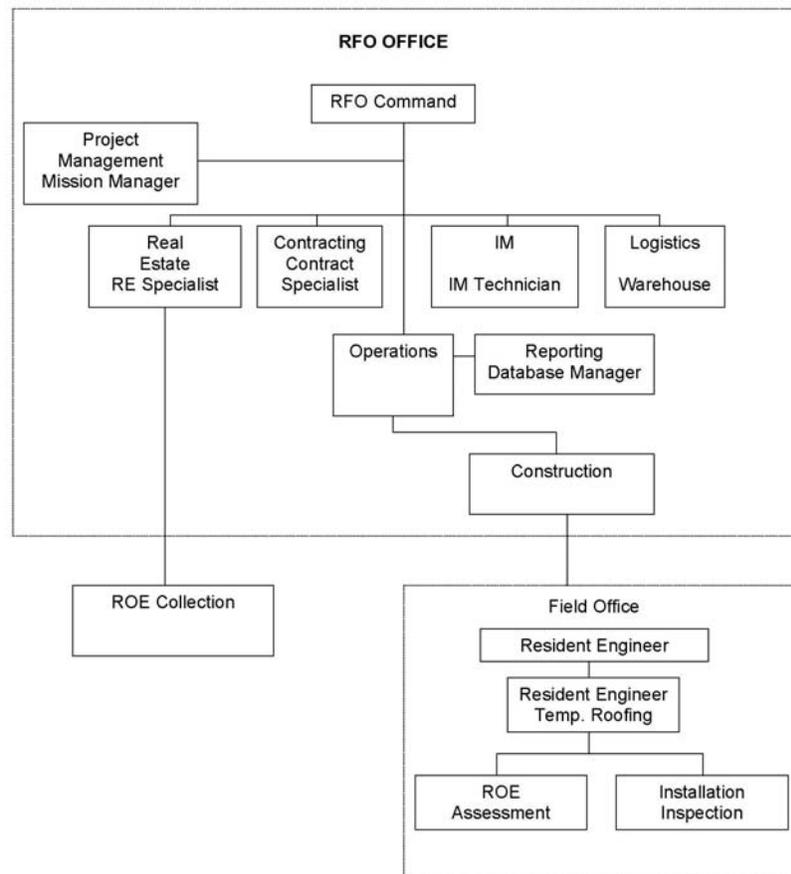


### 3.4 RECOVERY FIELD OFFICE

**Recovery Field Office.** A FEMA approved, USACE Temporary Office from which a responding organization, with the PRTs, conducts recovery and sometimes response missions. The office has high speed communications and is established in the geographic vicinity of the disaster and often near the JFO. The Mission Manager oversees the team, resolves issues, coordinates with the Action Officer and/or the SME, and upward reports essential elements of information from this location. The remainder of the PRT is staged out of the RFO. Shown below are two examples of how an RFO may be organized.



## Matrix Based Organization



### 3.5 MISSION PLAN/PROJECT MANAGEMENT PLAN

The Mission Manager and Action Officer shall develop a Mission Plan / Project Management Plan for the execution of the mission. The plan shall be coordinated within the team and provide the plan for response. Additional documents shall be incorporated as developed as appendices to the plan. Areas to be addressed include the following:

- Situation. Assessment; Critical Assumptions, Organization
- Mission Statement. Tasks; criteria; issues
- Execution. Concept of Operations; Specific Tasks to Agencies
- Logistics and Administration. Concept of Support; Special Assistance; Personnel (PRT, ACI Contractor); Funding; Mission Locations
- Lead and Support Relationships and Communications.

### 3.6 PLANNING FACTORS AND RULES OF THUMB

- Approximately \$4,000 per roof for cost estimating / funding (Incl. contractor / oversight)
- 1.5 rolls of 20'x100' blue plastic sheeting per roof.
- Trained contractor crews place complete 3 to 5 temporary roofs per day.
- 600 rolls of 20'x100' blue plastic sheeting per truckload, 28 rolls per pallet.
- After request for plastic from FEMA, allow 2 days for delivery. Initial push is 4 trucks per day for 5 days, a total of approximately 12,000 rolls.
- The damage is typically worst on the front right quadrant of the hurricane path.

### 3.7 INFORMATION SOURCES

Reference current USACE OPORD.

1. Damage estimates.
  - a. Overflights of area.
  - b. ENGLINK model; <https://englink.usace.army.mil> (877)936-4546
  - c. State and local EM offices
  - d. County population and households census information
2. Useful Websites
  - a. [www.fema.gov](http://www.fema.gov) for state maps with counties eligible for aid.
  - b. [www.nhc.noaa.gov](http://www.nhc.noaa.gov) for the National Hurricane Center
  - c. [www.intellicast.com/Tropical](http://www.intellicast.com/Tropical) for the Intellicast Tropical web page

### **3.8 TIMELINES**

Starting Operation Blue Roof requires up front planning and coordination. Order and Receipt of FEMA Plastic, Collection of Rights of Entry, QA Staffing and mobilization of the ACI contractor are critical path items that dictate the start and ability to sustain production rates. No notice disasters (tornado / earthquake) begin at D+0 for planning purposes. The following timeline was observed for a large event (Hurricane Katrina).

- (D-2) Pre Declaration Deployment of Management Cell.
- D Day – Disaster occurs. Coordinate plastic order & delivery through FEMA, Activate ACI Contractor, and QA Staffing Plan.
- (D+2) Remainder of PRT Deployed (Level of staffing based on magnitude of event)
- (D+4) Right of Entry Collection Begins (Tied to end of response), plastic received.
- (D+5) Contractor mobilizes to designated site
- (D+6) Contractor crew and QA's trained.
- (D+7) Operation Blue Roof begins

### **3.9 EXIT STRATEGY**

An exit strategy should be developed by the PRT with the State and FEMA by D+30 to address a point in the recovery when the State is able to handle the remaining workload either by contract or use of Volunteer Agencies. The PRT shall assist the state in ordering the required supplies if requested and develop a seamless transition of duties.

## 4.0 CONTRACTS

### 4.1 ACI CONTRACTS

The Corps of Engineers maintains a number of pre awarded Advanced Contracting Initiative (ACI) temporary roofing contracts. Each of the pre awarded contracts is specific to a state / geographical region / territory of the United States and contractors can begin mobilization within 24 hours of notification. If ACI contracts are not utilized a minimum of 10 days is required to award a task order under emergency contracting conditions.

### 4.2 PRODUCTION RATES AND CONSIDERATIONS

Refer to existing contracts terms and conditions.

Days after Task Order Award	Single Contractor Production Rate	Multiple Contractors Simultaneous Start*
Day 4	1 roofs / day	5 roofs / day
Day 5	5 roofs / day	15 roofs / day
Day 6	20 roofs / day	55 roofs / day
Day 7	40 roofs / day	125 roofs / day
Day 8	60 roofs / day	200 roofs / day
Day 9	120 roofs / day	400 roofs / day
Day 10	300 roofs / day	600 roofs / day

\*Note: Multiple Contractors production ramp up is based on availability of crews not contractors.

Event Size	Roofs Damaged	Ramp Up to peak production	Peak Production (Per Contractor)*
Small (< \$5 million)	3,000	9 Days	120
Medium (\$5 - \$25 million)	3,000-15,000	10 Days	300
Large (>\$25 million)	> 15,000	10 Days	300

\* Peak production is a function of staffing (Quality Assurance Representatives, ROE Collection Centers), collecting enough qualifying ROE's to enable the contractor to meet peak production and the availability of FEMA supplied plastic. The 2008 CONUS Contracts call for a peak production of 500 roofs per contractor.

1. General. Contractor crews can generally apply 3-5 Temporary Roofs each day. Variables include: travel time, roof pitch and size.
2. Considerations / Impacts to Production
  - a. Right Of Entry collection directly impacts production

- b. Staffing of ROE Collection Centers with QAs may impact QA availability to perform assessments
- c. Contractor crews may be limited by availability of housing.
- d. 20' x 100' rolls of blue plastic sheeting are preferred for the ACI contract. Odd sizes can be distributed to VOLAGs (if excess)
- e. Assign distinct area boundaries to contractors / VOLAGs, etc. in the case of multiple contractors (county lines, major geographical features, etc...)
- f. QA Staffing has to balance between ROE Collection, Assessments, Quality Assurance during Construction and Finalization/Acceptance.

### 4.3 QUALITY CONTROL AND QUALITY ASSURANCE

Quality Control is performed by the Contractor and consists of providing a quality product on time and to contractual requirements. Do's and don'ts for the contractor crews are as follows:

1. No entering of homes / foul play with homeowners belongings.
2. Refrain from allowing homeowners on the roof while contractor is present.
3. Do not apply a temporary roof to flat roofs. Apply roofs in accordance with the national policy on coverage or the event coverage policy that is in writing.
4. Tarps applied by homeowners will be covered unless the homeowner requests removal. Be aware of holes and soft spots.
5. Comply with EM 385-1-1 Safety requirements.
6. Police area around the house of all water bottles, trash, excess material and all other temporary roofing related trash.
7. Keep personnel on team hydrated, monitor personnel for heat exhaustion.

Quality Assurance is performed by the Government or authorized representative to ensure the homeowner received a temporary roof in accordance with the mission requirements. They are:

1. Front line Corps representatives to the public
2. Verify eligibility and initial estimates.
3. Inspect contract work for quality and safety
4. Verify completed quantities for payment and progress reporting.

Collection Centers: During the beginning of a mission these may be fully staffed by QAs. Once contracted admin support is available the use of QAs involved in the ROE collection process can be greatly reduced. Due to the limited availability of QAs, the following guidance should be used:

No more than 20 QAs at the beginning of a mission and after D+20 utilizing a maximum of 10 QAs involved in the collection process.

Assessments/Estimates: Every ROE will be assessed to insure that the property is eligible and within the scope of the roofing mission. Assessments/Estimates may be done by Corps QAs. Other, non-Corps sources for QAs include: Corps Retired Annuitant Program, Bureau of Land Reclamation, Bureau of Land Management, U.S. Forest Service or other Federal Agencies. The Corps may also use A&E Inspection Contracts to provide additional QAs.

Depending on local conditions a QA should be able to perform 7-10 Assessments/Estimates per day.

QA During Construction: To make QAs available to do assessments the number of QAs performing quality assurance during construction has been greatly reduced. To make up for this reduction any QA performing assessments may spot check a crew to insure they are following contract requirements. The use of dedicated QAs to perform trouble shooting and quality assurance of a contractor's quality control program should be limited to no more than 5 QAs per Resident Engineer Office.

Finalizations: At the beginning of a mission 100% joint inspections by the contractor's representative and a Corps QA may be performed from the ground. As the production increases the finalization process with the approval of the Contracting Officer will shift to a 15% random sampling of the pay estimate. Final inspections will be performed by the contractor's QCs. Once the pay estimate is submitted the Corps QA with the contractor's representative will verify the quantities and quality of the work by performing on the roof inspections. The number of QAs needed to perform finalizations is 10-20 QAs per Resident Engineer Office.

Equipment needs for Quality Assurance representatives and Team Leaders as well as Resident Engineers / field personnel. QA representatives should have the following equipment to perform their duties.

1. Corps Safety Manual, ER 385-1-1, hard hat and safety shoes
2. Measuring tape (or wheel), clip board, pens, calculator
3. Insect repellent, raingear, flashlight, cell phone / 2 way radio
4. Maps of the area.

## 5.0 Rights of Entry

### 5.1 GENERAL

**Definition:** The Right of Entry (ROE) is the legal instrument that grants permission for the Government and its agents (contractors) to enter onto the homeowner's property for temporary roof installation. In addition the ROE:

1. Is not an obligation that the government will install a temporary roof
2. Expresses no warranty, expressed or implied, for the installation of the temporary roof.
3. Includes hold harmless clause for government.
4. The English version is the official version; the Spanish version is for information.

**Eligibility:** Eligibility criteria are determined by FEMA. Criteria may be established in a national eligibility policy. If there is no national eligibility policy in effect, then the Action Officer (AO) working with the Federal Coordinating Officer (FCO) at the JFO will establish the eligibility criteria for the event in that state (See appendix for examples).

**Collection:** Collection of ROEs may be through Corps of Engineers Collection Centers, FEMA Disaster Recovery Centers, a Call In Center, a QA while performing other duties in the field or by canvassing neighborhoods.

**Rights of Entry Forms:** Rights of Entry forms are requested by the PRT Mission Manager or other representative and obtained through the Jacksonville District. The POC is the District EM who can be reached at (904) 232-3626 or (904) 424-2726 (cell).

### 5.2 COLLECTION CENTER OPERATIONS

The opening and closing of ROE Collection Centers shall be coordinated with Federal, State and local entities, as well as PAOs to ensure the widest dissemination in print and news media.

The numbers and location of Collection Centers will depend on the event. Criteria to consider is population served, proximity to transportation systems, travel time for applicants, parking, restrooms and staffing. Placing of Collection Centers too close to each other is to be avoided and should be based on the Mission Plan developed at the beginning of the mission.

Closing of individual Centers should be considered when collected numbers of ROE's average less than 50 a day for 3 consecutive days and has the approval of FEMA. A banner, media notice, FEMA Incident Action Plan (or other internal coordination tools) should be used to advertise opening and closing of ROE Collection Centers.

The closing of all Collection Centers (cut off date for applications) is coordinated with the FCO at the JFO by the Action Officer. It may be determined by national policy or by event.

ROE collection is the responsibility of the Temporary Roofing Mission PRT and/or their designated representatives to include contract hires, VOLAGs, National Guard and other Government Agencies. Roofing contractor personnel shall not be used.

The ROE initiates the homeowners request for a Temporary Roof. It is used to:

1. Determine eligibility of the roof
2. To record initial estimated quantities
3. As a work order for the contractor to install the roof
4. Document the final quantity of material used to pay the contractor.
5. To track mission progress and forecast future requirements and needs.
6. The ROE must be neat, legible and complete

Signature Requirements – See Chart Below

<b>Building Category</b>	<b>ROE Signers</b>
Individual, Private	Homeowner
Private Mobile Home (owns home & land)	Homeowner
Private Mobile Home (owns home and leases land)	Homeowner
Rental Home / Mobile Home	Landlord or tenant with apparent authority
Apartment	Landlord or apartment manager with apparent authority. Not a tenant.
Condominium	Homeowner, Condo Association President or manager, but not a tenant.
Other Structures	Structure owner or authorized by FEMA representative.

1. All people signing an ROE shall print their name below their signature.
2. If doubt exists as to the authority of the person authorizing entry (apparent authority). Write the individuals drivers license number on the ROE (front, bottom or side margin)

Processing – The chart below indicates how the ROE Form is processed.

<b>ROE Copies / Color</b>	<b>Distribution</b>	<b>When Copy is given to recipient</b>	<b>Remarks</b>
Copy 1 White (Original)	USACE Personnel	USACE maintains	Kept for USACE Official File
Copy 2 – Green	Contractor	After completion of the initial estimate and issuance of the work order. Given with the yellow copy.	Submits with payment invoice
Copy 3 – Yellow	Contractor	After completion of the initial estimate and issuance of the work order. Given with the green copy	For contractor’s internal use in tracking and scheduling work
Copy 4 – Pink	Applicant	After determination of eligibility and/or initial estimate is complete	Indication site inspection has been made and notifies the applicant of eligibility
Copy 5 – Gold	Applicant	At original sign up center when completed by applicant	Used by applicant to have ROE record and for cancellation purposes

### 5.3 DISASTER RECOVERY CENTERS

Disaster Recovery Centers (DRCs) are operated by FEMA after an event to provide assistance to people affected by the hurricane. Depending on the event, FEMA may request that people be allowed to sign up at various DRCs.

The best scenario if FEMA requires this is to have a Corps of Engineers representative present to ensure that the applicant actually has roof damage (screening) and also has not previously signed up at a Collection Center (duplication). If it is not possible to have a Corps of Engineers’ representative at the DRC, then strip maps to the nearest Collection Center should be provided with the operating hours of the Center and if known the last date that applications may be taken.

#### 5.4 CALL IN CENTER

The purpose of a call in center is to assist people dislocated from their homes or the area in applying for a temporary roof and to assist homeowners with specific roofing program questions. Those eligible include personnel who: have evacuated the area, are not located near a Right of Entry Collection Center, do not have a reliable form of transportation / access to the center is an issue and those who have special needs (homebound, handicapped, etc...).

1. Set up and operation of the call in center may be authorized and funded by FEMA.
2. Staffing may be: volunteers, government or contract employees to answer incoming phone calls / faxes.
3. Required equipment includes tables, chairs, faxes, telephones, copy machine, scanner and general office supplies to support the proposed staff.

#### **Call in Center Operations** (1-888-ROOF-BLU) – 766-3258.

1. The Temporary Roofing PRT will coordinate the establishment of the 1-888-ROOF-BLU closely with FEMA, the impacted State and the District overseeing the toll free number effort to ensure the daily message is accurate and updated. SAJ Emergency Operations is the POC for changes to the ROOF BLU script – (904) -232-3626
2. The preprogrammed message on 1-888-ROOF-BLU should contain the following:
3. A simple overview of the program to include qualifying criteria, right of entry process and the fact that it is no cost to the homeowner.
4. The addresses and hours of operation of ROE Collection centers (By state for a multi state response).
5. Phone numbers if applicable
6. Script will be revised according to mission requirements.
7. Hours of operation should be from 7am until 7 pm with an answering machine to give hours of operations / other after hour's alternatives for assistance during non operational hours.
8. A Call back line should be dedicated for applicants to call back to the center should they have additional questions on the program.

**Call in Center Personnel.** The personnel answering the phones should have good communication skills as the primary duties will be:

1. Asking a series of pre-scripted questions of callers to determine eligibility and ensure consistent, accurate information is given to all callers.
2. Upon qualification, the individual will be provided information to the nearest Right of Entry Collection Center to complete the required ROE. If the individual does not qualify he/she will be provided the FEMA number for Public Assistance.

3. If the individual is unable to visit a Right of Entry Collection Center the operator will fill out the ROE Form over the phone. Once complete the applicant shall be given the ROE number for tracking purposes. The operator shall initial and date the bottom of the form. If the individual has fax capability the form can be faxed from the call in center. Completed ROE's will then be forwarded to the Temporary Roofing PRT Mission Manager via fax, courier or mail at his/her duty location.
4. Operators shall inform applicants of the process for cancellation of an ROE prior to the government installation of the temporary roof. This form may also be provided via fax. The applicant shall be informed to place the Request for Cancellation in a high visibility area of the house that can be seen by the contractor crew / government representative. As stated above, Requests for Cancellation shall be provided to the Mission Manager via fax, courier or phone.
5. Operators shall maintain a current list of ROE Collection Centers and hours of operation, A FEMA map of qualifying aid by county (available at fema.gov) telephone numbers of volunteer organizations for referral to non-qualifying structures or special needs cases as well as a list of FEMA Disaster Response Centers (DRC'S)
6. Internet access to provide electronic access to USACE information on the application process and forms should be available or known by the operators.

**Call in Center Processes.** The following processes shall be utilized to respond to applicants. The content should be coordinated between USACE, the State and FEMA.

1. Special Needs. Justification to expedite an application for the elderly, infirm or homebound as well as emergency response personnel (police, fire...) who are required to stay in the area. Additionally, a red marker should be used to draw a line across the top of the ROE by the operator to signify special needs (In addition to marking the appropriate "SN" designation on the ROE Form.
2. Non Qualifying for Roof Repairs. The purpose of this process is to give homeowners a document that they can pass to their insurance company on why they were denied a temporary roof. "DSQ" and "BY" (Disqualified or Beyond Repair) annotations on the ROE Form are utilized for this,
3. Homeowner Inquiry Process (Complaint). To be utilized for homeowners with complaints. Complaint would then be forwarded to PRT Mission Manager or Resident Engineer for follow-up and resolution. See Appendix A to the Temporary Roofing PRT Collection, Call in Centers and PAO SOP.
4. Operator Script. Tailored to the declared area to ensure consistency of information and incorporate mission requirements. To be edited as required.
5. Fax Cover Sheet. Should have Operation ROOF BLU on Title.

6. Request for Cancellation Process. Process is listed on the back of the ROE Gold Copy.
7. List of Phone Numbers for DRCs, County Distribution Points, Various Organizations – information that is widely requested.

**Filling Out the Right of Entry Form:** In the spaces or blocks enter the following:

1. **Project, Installation or Activity:** i.e. Hurricane Frances or Hurricane Jean.
2. **In the Blanks in Paragraph 1:** Time period should be 60 days for ROEs. (Note: This is NOT when the homeowner will receive a blue roof. It establishes the expiration of the Right-of-Entry agreement between the homeowner and the Government.)
3. **In the Blanks in Paragraph 5:** Enter the County the house is located in.
4. **Blank area above “Witness my hand and seal”:** Enter the Street Address where the home is located. Add, if possible, any additional data, subdivision, landmarks, etc, that might help follow-on teams locate the property.
5. **Witness my hand and seal:** date homeowner signs ROE.
6. **Blank area below “Witness my hand and seal”:** Location sketch and house plan sketch showing QA’s understanding of damage. (Note: If ROE is filled out at a Help Center or received by Phone a location map and condition sketch may not be possible until the assessment person or team actually visits the home site.)
7. **Owner/Agent Signature:** Homeowners Signature
8. **Print Name:** Homeowner’s Name
9. **Mailing Address:** Where the homeowner is receiving mail NOW. (Note: This must be a mailing address where the homeowner is available to receive mail in the immediate future. This may be the same address as noted above in “Blank area above “Witness my hand and seal” or it may be different but enter it fully either way
10. **Phone:** Number where we can access homeowner NOW.
11. **Updated ROE Form. See Appendix G.**

## 5.5 ROE HELPFUL HINTS

- If the ROE is received at a Collection Center or via telephone, no further data is required on the form at this time. Provide the homeowner the Pink Copy (Help Center) or Fax a copy of the Pink ROE to the homeowner (Call In). File the ROE in the completed basket and proceed to help the next homeowner with a new ROE form.
- If you are on site or if you have been provided the initial ROE from a Help Center it is now appropriate to complete “Estimated Quantity” section at the top of the ROE form. Note do not perform the estimate if the ROE is not signed by the

homeowner. If you enter their property (other than to knock on the front door) without a signed ROE, you are trespassing. ROE's should be signed by the property owner or someone with appropriate written authority to sign on their behalf. Signatures of tenants, neighbors or relatives are normally not acceptable unless there are special circumstances which would make it advisable to proceed with the repair. Acceptance any signatures other than the property owner or someone with written authority to sign on their behalf should be coordinated with the Realty Specialist in advance. The Realty Specialist is responsible for coordinating with and obtaining concurrence from Counsel and the Mission Manager. Before performing an initial estimate, the Government Representative must first determine if the structure qualifies for FEMA "Blue-Roof" assistance.

- Once qualified for Blue Roof assistance the estimated quantity may be performed.
- The estimate is used to compare the contractor's actual work vs what the Government's representative (QA) initially estimated as required to complete the job. It is important to note that due to the size of an emergency, the final QA site visit might not occur until after the temporary Blue-Roof has already been installed by the contractor. As such, the "Estimated Quantity" is a final check that the contractor completed the work using a reasonable quantity of materials necessary to cover only the damaged portions of a roof. Note: Should a contractor feel that the "Estimated Quantities" are unrealistic or should he find more damage than seen by the QA during the initial site visit, it is incumbent on the contractor to contact the QA and resolve any discrepancies prior to installing the temporary Blue Roof. The Estimated Quantities should be prepared from the ground level and represent the QA's best estimate of: a) the area of a roof that should be covered by a temporary plastic roof to reasonably protect the home and its contents, b) the linear feet of "2 x 4" lumber necessary to provide temporary repairs to damaged structure and c) an estimate of the square footage of plywood necessary to bridge or cover any damaged roof decking. Note: it is not necessary or required to fully patch over all openings in the roof decks. Any additional 2 x 4 lumber or plywood is only required to provide suitable support for the temporary roof so as to prevent ponding and/or to provide a safe working platform for the contractor's crews. (*Sketches of area coverage's would be inserted here*) After completing the estimate, the QA should print and sign his/her name below the estimated quantities so they may be contacted if any questions concerning the estimate should arise. If this is an on-site ROE initiation, give homeowner "Pink" copy upon completion of Estimated Quantity. The estimated ROE is now returned to the Resident Office. If the pink copy has already been given out, do not provide another existing ROE copy.
- After entering the ROE's into the Database the Resident Office will collate the ROEs into geographic groups and issue the Yellow copies to the contractor(s) as taskers to install roofs.

- Upon completion of the blue roof installation, the QA will visit the home and jointly with the contractor's CQC determine the actual area of roof covered by temporary roofing, the actual quantity of 2 by 4 lumber and the actual square footage of plywood used to support the temporary roof. These three amounts are to be recorded on the ROE in the upper section of the form beneath the header: "FINAL QUANTITY". Both the Contractor's CQC and the Government's QA must print and sign their names below the agreed amounts.
- The contractor then retains the Green copy (both the white original and the green copy must have the same quantities and signatures under the "FINAL QUANTITY" header). The white copy and any other remaining copies are returned to the Resident Office.
- For the current billing cycle of the contract, the contractor will collect all signed green copies since the previous billing cycle and attach them to a request for payment. He will total each of the payment line item quantities and multiply them times his bid cost per unit quantity. The contractor will then submit those three amounts, the green ROE copies and his calculation sheets with his request for payment.
- Upon receipt of a payment request, the Resident Office will then pull the corresponding white copies of the ROEs submitted (or extract the information from the database) and check the ROE quantities and the mathematical calculations of the contractor's pay request. Any disputed ROE's will be removed from the pay request and discussed with the contractor. Once an agreement is reached on what ROE's and total quantities are to be included in the pay request, the payment amounts (less any deductions for any contract issues, payrolls, warranty, etc) will be processed for payment. The paid ROE's are then moved from the active files to the "paid" files along with the contractor's pay request.

Sample ROE Daily Report.

10-Nov-05	FORREST	LAMAR	JONES	GREENE	STONE	GEORGE	COVINGTON	JEFF DAVIS	MARION	PERRY	LAWRENCE	JASPER	WALTHALL	OTHER	TOTAL	
Thursday															BY CENTER	
WINN-DIXIE	33		1		1	1	1								3	40
LOWE'S	6	21	1	1			3								2	34
DRC, JONES			36				6					6				48
DRC, JASPER												11			1	12
DRC, MARION								2	19						1	22
CALLCENTER			3			1				1						5
WRITTEN/FIELD	4	4	3	4									6			21
CLOSED CENTERS																0
DRC, JEFF DAVIS	CLOSED								CLOSED							0
DRC, COVINGTON	CLOSED								CLOSED							0
DRC, GEORGE	CLOSED								CLOSED							0
DRC, WIGGINS	CLOSED								CLOSED							0
DRC, LAWRENCE	CLOSED								CLOSED							0
DRC, LINCOLN	CLOSED								CLOSED							0
DRC, PURVIS	CLOSED								CLOSED							0
CORNER MKT	CLOSED								CLOSED							0
MT CARMEL	CLOSED								CLOSED							0
SMITH, RALEIGH	CLOSED								CLOSED							0
DRC, PIKE	CLOSED								CLOSED							0
DRC, WALTHALL	CLOSED								CLOSED							0
DRC, SIMPSON	CLOSED								CLOSED							0
CLARKE, QUITMAN	CLOSED								CLOSED							0
PERRY	CLOSED								CLOSED							0
GREENE	CLOSED								CLOSED							0
DRC, WAYNE	CLOSED								CLOSED							0
TOTALS	43	25	44	5	1	2	10	2	19	1	0	17	6	7		0
														TOTAL		182

## 6.0 MEDIA

### 6.1 PRESS ADVOCACY

Communications with the media should be coordinated with the PAO assigned to the response. This ensures a “One Voice” response and avoids misinformation to the public. All PRT members should be familiar with the response talking points as they regularly interface with and have first line contact with the public. Finally, if you are not comfortable talking to the media, refer them up the chain of command or to other members on the PRT.

Items to be developed to ensure continuity and accuracy of information given to the public shall be coordinated with FEMA and the State PIO prior to issuance and may include:

1. Fact Sheets
2. Q&A Sheets
3. Web Site Development
4. Media Notices / Releases
5. News Briefings

### 6.2 SAMPLE PRESS RELEASE

Sample Press Release for a Collection Center

GULFPORT, MISS ... Harrison County residents can now sign up for the Blue Roof Program at the Blue Roof Sign Up Station at the Harrison County Justice Center, 1620 23rd Avenue, Gulfport, from 8:00 a.m. to 6 p.m. Additional Harrison County Sign Up Stations will be opened in coordination with local EOCs in coming days, as well as centers in other coast counties. Residents or their agents need to file their request in their home county and not cross county boundaries seeking Blue Roof support. Disaster teams are working this week to set up Sign Up Stations in Jackson, Hancock, Harrison, and lower Pearl River counties. Additional counties will be added as the need is expressed by county officials. Additional Blue Roof Sign Up Stations locations will be posted on the Corps disaster web site at [ww.mvd.usace.army.mil](http://ww.mvd.usace.army.mil) and released through local media and EOC outlets. **Operation Blue Roof** is a priority mission managed by the U.S. Army Corps of Engineers for the Department of Homeland Security's Federal Emergency Management Agency (FEMA). The program provides assistance to storm victims in disaster areas through the installation of rolled plastic sheeting on damaged roofs, thereby helping to protect property and allowing residents to remain in their homes. Residents will need to complete a Right of Entry Form to allow Corps Federal roofing teams to assess their property and assign the work to a Blue Roof contractor.

Disaster experience has proven that it is more efficient for residents to come to a servicing center rather than have limited disaster workers go door to door when only 10%

of home owners will actually be in the home. Corps roofing team members will go to the property, do a damage and eligibility assessment, and give the roofing contractor a tasking order. Property owners should expect work within 14 days of the request. Corps roofing team members will have proper identification and uniforms. Citizens should not hesitate to ask persons approaching their property for proper identification.

### **6.3 TALKING POINTS**

Develop a Fact Sheet that covers the primary aspects of the Blue Roof program to ensure consistent information is being given to the public by team members. Topics should include:

1. Eligibility criteria for a temporary roof
2. The importance of the Right of Entry and ROE process
3. Location of ROE Collection Centers.
4. Order and coordination of work (by county)

## **7.0 UPWARD REPORTING**

### **7.1 ESSENTIAL ELEMENTS OF INFORMATION (EEI)**

**Data:** All data collected for a 24 hour period will be provided to the Mission Specialist by 0900 on the following day for use in daily SITREPS and Commander Briefings. Definitions for consistency in reporting are as follows:

1. ROEs estimated. ROEs that have initial government estimates completed.
2. Final Corps inspected Roofs: A roof installed that has passed final inspection and was accepted by the government.
3. Disqualifications. A structure that did not meet FEMA qualifications for structure type (e.g. commercial building, non-residential, etc...)
4. Out of Scope. The type of existing roof is not within the scope of the contract for overlay of a temporary roof. Examples include: metal, flat, membrane and tile roofs.
5. Beyond Repair. Roofs / structures that do not meet the 50% rule.

**Essential Elements of Information:** Update by 0900 the following day, the progress made during the previous day or longer period. These include:

<b>Cumulative to Date</b>	
# ROE's Collected Cumulative	Numbers
# ROE's Collected last 24 hours	Numbers
Assessments (# ROEs) Cumulative	Numbers
Assessments (# ROEs) last 24 hrs	Numbers
Number of Structures Completed Cumulative (Contractor reported by ROE number)	Numbers
Number of Structures completed last 24 hours. (Contractor reported by ROE number)	Numbers
Number of contracts awarded	Numbers
Final Inspections Approved Cumulative (USACE)	Numbers
Final Inspections Approved Last 24 hours (USACE)	Numbers
Contractors daily Locations	Geographical Area
Estimated Completion Dates and Percent Complete	Dates and Percentages
<b>Plastic Sheeting</b>	
Plastic Sheeting Rolls previous total	Numbers
Plastic Sheeting Rolls received	Numbers
Plastic Sheeting Rolls issued	Numbers
Plastic Sheeting Rolls currently on Hand	Numbers
<b>QA Manpower</b>	
Corps of Engineers	Numbers
Other Federal Agencies	Numbers
Contracted QAs	Numbers
Military	Numbers
VOLAG	Numbers
Total	Numbers
<b>QA Utilization</b>	
ROE Collection	Numbers
ROE Assessment	Numbers
QA During Construction	Numbers
Final Inspection	Numbers
Database/Office	Numbers
Total	Numbers

7.2 SAMPLE REPORTS

County Summary Report: Submitted by QA Supervisor to Resident Engineer

COUNTY SUMMARY REPORT

Date: \_\_\_\_\_

County: \_\_\_\_\_

Daily Quantity Reports	
ROE's	
Estimated Today :	
DQs, BR,OS Today :	
CORPS QA	
BOR QAs	
CB QAs	
AE QAs	
Roofs Inspected & Accepted	
Material Used	
Plastic :	
Plywood :	
2 x 4s :	
Small Roof Repair :	

Daily FRAGO Report

As of Date: **23-Oct-05**

Parish	Projected Roofs	ROE Collected Last 24 Hours	Total ROE's Collected	DSQ & Cancels in Database	ROE's Estimated Last 24 Hours	Total ROE's Estimated	Roofs Installed Last 24 Hours	Total Roofs Installed	Final QA Inspection Last 24 Hours	Total Final QA Inspection	Daily Crews in Field	Plastic Ordered	Plastic Received	Plastic On-Hand	Days Until Depletion*	
<b>East (Katrina)</b>																
Estimate 50,000 potential roofing missions for Katrina																
Jefferson	22000	102	26491	2368	186	22010	47	21055	521	11978	56					
Orleans	10000	556	12082	921	555	8636	338	5780	254	3878	111					
Plaquemines	1200	1	1430	140	6	1019	3	1001	15	806	1					
St. Bernard	200	33	455	1	0	6	0	3	0	3	0					
St. Charles	1600	3	1533	90	23	1160	4	1141	23	782	2					
St. Mary	-	0	20	3	0	3	0	2	0	0	0					
Ascension	50	0	35	3	0	17	0	12	0	2	0					
E Feliciana	-	0	1	0	0	1	0	1	0	0	0					
W Feliciana	-	0	0	0	0	0	0	0	0	0	0					
Pointe Coupee	-	0	2	0	0	0	0	0	0	0	0					
<b>Katrina Total</b>		<b>695</b>	<b>42049</b>	<b>3526</b>	<b>770</b>	<b>32852</b>	<b>392</b>	<b>28995</b>	<b>813</b>	<b>17449</b>	<b>170</b>					
<b>35% Completed</b>																
<b>West (Rita)</b>																
Estimate 30,000 potential roofing missions for Rita																
Vermilion	375	0	66	0	0	0	0	0	0	0	0					
Acadia	-	0	43	0	0	0	0	0	0	0	0					
Jefferson Davis	2200	3	701	23	20	329	8	173	29	30	2					
Allen	-	0	59	0	0	0	0	0	0	0	0					
Cameron	900	8	303	15	2	227	5	203	12	44	2					
Calcasieu	24100	76	16928	1236	624	13751	501	11770	558	6477	167					
Beauregard	2400	1	200	17	14	179	27	164	0	32	10					
St. Landry	-	1	30	0	0	0	0	0	0	0	0					
Lafayette	-	0	40	6	0	0	0	0	0	0	0					
Vernon	-	0	21	0	0	0	0	0	0	0	0					
Evangeline	-	0	5	0	0	0	0	0	0	0	0					
Sabine	-	0	8	0	0	0	0	0	0	0	0					
<b>Rita Total</b>		<b>89</b>	<b>18404</b>	<b>1297</b>	<b>660</b>	<b>14486</b>	<b>541</b>	<b>12310</b>	<b>599</b>	<b>6583</b>	<b>181</b>					
<b>22% Completed</b>																
<b>Louisiana Total</b>		<b>784</b>	<b>60453</b>	<b>4823</b>	<b>1430</b>	<b>47338</b>	<b>933</b>	<b>41305</b>	<b>1412</b>	<b>24032</b>	<b>351</b>					
Plastic: (Reported as standard 20x100 rolls)																
USACE Warehouse	20x100														21512	
Contractor:																
VOLAG	20x100														614	
Shaw	20x100													33902	11052	11
Simon	20x100													13568	1286	2
LJC	20x100													29454	10301	13

Total number personnel working mission	Katrina	Rita
Federal QAs	142	85
Contractor QAs	167	40
Corps Staff	33	

\* Days until plastic depletion assumes 1 roll of plastic per roof.  
 \*\* Contractor(s) reconciled previously reported roofs installed with their current database  
 NOTE: The daily roofing report is intended to assist the roofing team with future planning.  
 The values shown give an estimate of mission production; the reported numbers are not absolute.

## Cumulative Daily Reports

Hurricane Katrina  
Blue Roof Mission  
Daily Numbers  
4-Nov-05  
d66

County	ROE's last 24hrs	Cumulative ROE	ROE (Validated) last 24hrs	Cumulative (Validated) ROE	Roofs Installed Carothers last 24hrs	Roofs Installed Ceres last 24hrs	Roofs Installed S&M last 24hrs	Total per County last 24hrs	Cumulative Roofs Installed	Roofs Inspected last 24hrs	Cumulative Roofs Inspected	Contractor Crews last 24hrs	QA's last 24hrs
Hancock	12	3996	11	2077	0	49	0	49	3459	32	3050	15	16
Harrison	91	15572	37	6784	48	18	32	98	13691	80	13369	28	76
Jackson	60	9169	84	5177	0	0	45	45	8238	123	7808	11	45
Pearl River	10	3820	45	2296	0	22	0	22	2835	50	3259	5	12
<b>Total</b>	<b>173</b>	<b>32557</b>	<b>177</b>	<b>16337</b>	<b>48</b>	<b>89</b>	<b>77</b>	<b>214</b>	<b>28223</b>	<b>285</b>	<b>27486</b>	<b>59</b>	<b>149</b>
Forrest	22	5164	6	3998	0	30	0	30	4861	44	4020	10	58
George	17	869	24	709	0	6	0	6	679	0	666	1	2
Greene	3	449	1	528	0	0	0	0	372	0	333	0	1
Lamar	5	1745	10	1666	0	21	0	21	1399	31	1308	6	4
Shut	1	702	0	748	0	6	0	6	546	46	538	3	1
Stone	4	1439	6	1599	0	19	0	19	1517	13	1204	5	3
<b>Total</b>	<b>52</b>	<b>10368</b>	<b>47</b>	<b>9248</b>	<b>0</b>	<b>82</b>	<b>0</b>	<b>82</b>	<b>9374</b>	<b>134</b>	<b>8069</b>	<b>25</b>	<b>69</b>
Covington	8	731	5	592	0	19	0	19	623	45	426	10	4
Jeff Davis	2	519	0	671	0	13	0	13	552	28	462	5	1
Jones	27	2700	38	2926	0	68	0	68	2610	73	2252	21	8
Marion	13	1204	6	1382	0	25	0	25	1329	45	1041	7	4
Wayne	5	469	12	560	0	11	0	11	419	5	239	4	5
<b>Total</b>	<b>55</b>	<b>5623</b>	<b>61</b>	<b>6131</b>	<b>0</b>	<b>136</b>	<b>0</b>	<b>136</b>	<b>5533</b>	<b>196</b>	<b>4420</b>	<b>47</b>	<b>22</b>
Jasper	11	661	14	582	0	31	0	31	546	73	309	10	6
Lawrence	5	247	22	149	0	13	0	13	86	0	24	3	2
Walthall	6	588	1	508	0	36	0	36	405	20	305	10	4
Lincoln	0	224	5	175	0	0	2	2	110	0	78	0	2
Smith	3	175	0	115	0	0	0	0	84	0	57	0	0
Other	3	1251	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>28</b>	<b>3143</b>	<b>42</b>	<b>1529</b>	<b>0</b>	<b>80</b>	<b>0</b>	<b>80</b>	<b>1231</b>	<b>93</b>	<b>773</b>	<b>23</b>	<b>14</b>
<b>Overall Totals</b>	<b>308</b>	<b>51691</b>	<b>327</b>	<b>33245</b>	<b>48</b>	<b>387</b>	<b>77</b>	<b>512</b>	<b>44361</b>	<b>708</b>	<b>40748</b>	<b>154</b>	<b>254</b>

█ Indicates Current Counties with Roofs Installed  
█ Indicates Counties with Closed ROE Centers

## Mississippi Blue Roof Mission

Contractor	County	Estimated Roof Repairs	ROE's Last 24 Hours	Total ROE's	Carothers Roofs Installed Last 24 Hrs	Ceres Roofs Installed Last 24 Hrs	S & M Roofs Installed Last 24 Hrs	Total Roofs Installed per County Last 24hrs	Roofs Installed to Date	Estimated Completion Date	% Complete	Roofs Inspected Last 24 Hrs	Total Roofs Inspected
Carothers/Ceres	Hancock	4139	34	4110	0	23	0	23	3596		87	29	3214
Car./S&M/Ceres	Harrison	17138	39	15909	4	33	97	134	14194		83	113	13779
Carothers/S&M	Jackson	9999	103	9406	0	0	78	78	8539		85	62	8177
Carothers/Ceres	Pearl River	4390	4	3846	0	17	0	17	2917		66	26	3349
<b>Total</b>	<b>4</b>	<b>35666</b>	<b>180</b>	<b>33271</b>	<b>4</b>	<b>73</b>	<b>175</b>	<b>252</b>	<b>29246</b>		<b>82</b>	<b>230</b>	<b>28519</b>
Ceres	Forrest	4208	34	5296	0	13	0	13	4999		119	50	4403
Ceres	George	556	0	880	0	6	0	6	704		127	3	756
Ceres	Greene	462	0	452	0	0	0	0	374		81	4	384
Ceres	Lamar	1431	12	1803	0	12	0	12	1453		102	7	1433
Ceres	Perry	474	1	721	0	0	0	0	559		118	7	575
Ceres	Stone	1251	1	1541	0	3	0	3	1540		123	25	1289
<b>Total</b>	<b>6</b>	<b>8383</b>	<b>48</b>	<b>10693</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>34</b>	<b>9629</b>		<b>115</b>	<b>96</b>	<b>8840</b>
Ceres	Covington	600	6	758	0	8	0	8	703		117	9	516
Ceres	Jeff Davis	272	5	595	0	0	0	0	590		217	26	540
Ceres	Jones	1983	48	2920	0	30	0	30	2825		142	63	2672
Ceres	Marion	574	8	1447	0	6	0	6	1421		247	13	1144
Ceres	Wayne	252	1	510	0	28	0	28	538		213	29	392
<b>Total</b>	<b>5</b>	<b>3681</b>	<b>68</b>	<b>6230</b>	<b>0</b>	<b>72</b>	<b>0</b>	<b>72</b>	<b>6077</b>		<b>165</b>	<b>140</b>	<b>5264</b>
Ceres	Jasper	215	12	729	0	23	0	23	645		300	19	499
Ceres	Lawrence	158	2	254	0	1	0	1	128		81	13	77
Ceres	Walthall	178	7	614	0	0	0	0	459		258	3	428
Ceres	Lincoln	259	1	226	0	7	0	7	159		61	6	123
Ceres	Smith	193	3	186	0	5	0	5	99		51	0	106
Ceres	Other	3	1251	0	0	0	0	0	0		0	0	0
<b>Total</b>	<b>5</b>	<b>1004</b>	<b>38</b>	<b>3260</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>36</b>	<b>1490</b>		<b>751</b>	<b>41</b>	<b>1233</b>
<b>Cumulative Total</b>	<b>20</b>	<b>48733</b>	<b>334</b>	<b>53454</b>	<b>4</b>	<b>215</b>	<b>175</b>	<b>394</b>	<b>46442</b>	<b>30-Nov</b>	<b>95</b>	<b>507</b>	<b>43856</b>
Total number personnel working mission		237	Plastic Ordered (rolls 20X100)		52,500	Plastic On-Hand (rolls 20X100)		5,119					
Contracts issued as of date		3	Plastic Recieved (rolls 20X100)		51,347	Days Until Depletion							
Contract Capacity / Contractor (Roofs/Day)		500											

\* Numbers based on the addition of four counties and an increase to the contract to an estimated 48,000 roofs  
 \* On 10/12/2005 we are aware that contractors have 3500+/- ROE's not included in data base.  
 \* Cumulative ROE Data has been updated on 10/11/2005 using GIS Database information  
 █ Indicates Counties with Closed ROE Centers

**8.0 SPECIFICATIONS**

**8.1 PLASTIC SHEETING**

**FEMA Blue Plastic Sheeting Specification**

**String reinforced Polyethylene, Blue, Pantone 3005c to 2945c  
FEMA LOGO on both sides of sheeting White letters, 14” tall x 9”**

<b>Property</b>	<b>Specification</b>	<b>Reference</b>
Tensile Grab Strength:	50/50 lbf	ASTM D751
Tensile %Elongation	100/50%	ASTM D751
Trapezoid Tear:	20/20 lbf	ASTM D4533
Mullen Burst	90 psi	ASTM D3786
Tensile Grab	90%	ASTM D751/570
Dimension Stability	<2%	ASTM D1204
Oxidative Induction Time	20 min	ASTM D3895
Ash:	Color	ASTM D817
Flame Retardant	Class A	ASTM E84-97a
Seam Strength (Shear Strength) (Peel Strength)	80% of Tensile 10 ppi	ASTM D751 ASTM D751
UV Resistance	80% after 200 hr	ASTM G23
Multi-Axial Tensile Test	3000 psi	ASTM D5617
Multi-Axial % Deflection	20%	ASTM D5617

Extruded laminate sheeting, string reinforced, palletized or boxed, each pallet load wrapped with 8 ½” X 11” signs printed with “FEMA – NOT FOR RESALE” in as large as font as practicable inserted in the shrink wrap on all four sides of each pallet

Size of Plastic Sheeting Roll: 20’ X 100’

10 mil thickness 3 ply fiber reinforcements

40” X 48” hardwood pallet, 4 way

Plastic not to hang over sides

Plastic to be supported by egg crates every row

Every two rows to be strapped to pallet

Final strapping to be crossed over front and back

Pallet will be wrapped with no less than 3 turns of shrink wrap

Pallet will be no more than 2000 lbs total weight and not over 88” in height

## **8.2 TARPS**

Self Help Tarps are used for small areas of roof damage and are distributed by FEMA, states or local governments. For planning purposes there are 2,400 20x25' tarps per truckload. If FEMA runs out of Tarps they may direct the Corps of Engineers to order tarps for an event.

### **USACE Tarp Specification**

Size 20' x 25'

Woven polyethylene 8 x 8 (10 x 10 or 14 x 14 acceptable), 800 Denier

Thickness 5-6 mil

UV Treated

FR Treated

Non-corrosive grommets at corners and minimum of 3' on center on edges

Hems folded over

Corners reinforced

Color – medium blue

Packaged in cardboard box with 2x 100' lengths of 550 pound test parachute cord

Boxes to be palletized on standard size pallets

## **8.3 PROVIDERS OF PLASTIC SHEETING AND TARPS**

Plastic Sheeting – FEMA

Tarps – Vendors: Home Depot, Loews, local manufacturers, Protective Plastics, Austin Canvas, Tarps & Tie Downs, Zamzow Mfg, Detroit Tarpaulin, Noble Sales, Midwest Canvas, Hagemeyer, Mer Wil Industries, Odin International, Executive Hardware, Austin Tarps (maybe the same as above), All Poly, Home Depot, Chagrin Valley Aut Ocala, Exex. Do it Best, LDF Industries, Coastal Canvas, Cypress International, Tool-Price

## **9.0 LOGISTICS**

Requisition, storage and distribution of FEMA blue plastic sheeting is a critical Temporary Roofing PRT function.

### **9.1 REQUISITION**

Plastic Sheeting is ordered by the Action Officer (AO) at the Joint Field Office (JFO) on an Action Request Form, FEMA Form 90-136. To order Plastic Sheeting the AO must have the following information to relay to FEMA:

1. Drop Point location by street address
2. Name and 24 hour phone number of the person who will receive the Plastic Sheeting.
3. Assurances that there will be a fork lift with operator at the drop point at time of delivery.

Once Plastic Sheeting is ordered FEMA may take up to 48 hours to deliver the first truck load. The initial push will be 4 trucks per day for 5 days for approximately 12,000 rolls of Plastic Sheeting. Utilizing the general estimating rule of 1.5 rolls per house, this should be enough Plastic Sheeting to cover at least 8,000 homes.

The Real Estate Specialist and the Material Control Specialist will locate a securable storage area (at least 5 acres with suitable hard stand, trafficability, loading docks, accessibility, etc...) for lease as a distribution point for the contractors. Location will be coordinated with Resident Engineers. Recommend a warehouse be used as opposed to open storage. On open sites, FEMA may allow trailers to be left on site to provide protection from the weather. The use of Federal property is preferred, but other property may be used. The use of military properties with controlled access is not recommended.

### **9.2 STORAGE**

In addition to computer support the Warehouse operations requires a 4 in 1 machine (print, scan, copy, fax) to perform its operations along with a 2 ton forklift. The amount of forklifts required is a function of the magnitude of the event. Since plastic may be delivered and issued at various times, recommend that the fork lift operators be USACE employees that may also do other duties.

1. Each pallet contains 28 rolls of 20x100 foot rolls and weights 1670#
2. Pallets are 48"L x 48"H x 65"W for planning purposes

Warehouse should be covered and have two way traffic.

### **9.3 DISTRIBUTION**

Contractors will request and be distributed blue plastic sheeting based upon the production rate and Plastic Sheeting availability.

## 10.0 FUNDING

### 10.1 FUNDS REQUEST

When it becomes clear that the scripted Post Declaration funds are not sufficient, the Action Officer should submit, through the ESF#3 Team Leader, an Action Request Form, FEMA Form 90-136, Nov 04, for additional funds. The request should include a detailed justification (e.g. change in damage estimate).

### 10.2 COST SHARE

Cost share requirements are determined by FEMA and are often waived for a set period of time.

### 10.3 OTHER

The PRT may help develop funding requirements for other organizations (VOLAG) for acquisition of supplies and materials.

### 10.4 WORK BREAKDOWN STRUCTURE

Standard breakout for tracking of mission costs

#### SAMPLE

<b>HURRICANE PAM</b>				
<b>FUNDING</b>				
			Total Authorization	Obligated
Preposition Management of Roofing PRT			\$15,000	\$14,325
Activate & Deploy Roofing PRT			\$224,548	\$213,141
Perform Roofing Mission			\$130,000,000	\$122,845,904
			Total	\$123,073,370
<b>ROOFS INSTALLED</b>				
By Contractors		43,036		
By VOLAGS		375		
Total		43,411		
<b>EXPENSES</b>				
<b>Roofing Contractors</b>				
LBJ Roofing		\$19,890,125		
Bedford Inc.		\$19,950,375		
Kennedy Group		\$18,323,348		

	West Roofers		\$17,008,745		
	Sea Coast Inc.		\$13,687,448		
		Total	\$88,860,041		
Corps Management & Administrative					
Real Estate Leases					
	ROE Stations		\$15,000		
	Warehouses		\$60,000		
	Resident Engineer		\$25,000		
		Total	\$100,000		
Contracted Labor					
	A&E QA Support		\$6,878,000		
	Admin Support		\$3,012,000		
	Other		\$820,200		
		Total	\$10,710,200		
Non-Corps Govt. Labor					
			\$3,645,000		
Corps Labor					
			\$15,014,373		
		Total	\$18,659,373		
Other Indirect Costs					
			\$4,516,290		
Total Mgt & Admin					
			\$33,985,863		
		Grand Total Mission		\$122,845,904	

## 11.0 Volunteer Groups

Volunteer Groups (VOLAGs) such as AmeriCorps, the Christian Contractors Association, etc...are a component to mission execution. They provide a low cost response and may be used for properties in outlying areas or for high priority properties.

### 11.1 COORDINATION

Initial coordination is with the Action Officer at the JFO. Once contact is made control shifts to the Mission Manager at the RFO. The best scenario is to assign a very qualified QA to work with each VOLAG and utilize the VOLAG as a mini-contractor to best utilizes their services.

### 11.2 SUPPLIES AND EQUIPMENT FOR VOLAGS

**Supplies for VOLAGs:** An ARF, FEMA Form 90-136 may need to be developed to provide plastic sheeting and materials (furring strips, 2x4's, plywood and nails).

**Equipment for VOLAGs:** Many VOLAGs will bring with them their own equipment and vehicles. Some VOLAGs such as AmeriCorps may not have equipment (tools). During an event FEMA may authorize GSA to purchase equipment for a VOLAG. This is coordinated through the Action Officer at the JFO. The list below was utilized during the 2004 season in Florida:

#### Equipment per Crew (5 Man)

- 2 Extension Ladders (16' or 18')
- 1 Step Ladder (7')
- 2 Tape Measures (16' or 20')
- 5 Hammers (20-22oz) (Straight Claw) (Smooth Face)
- 5 Utility Knives
- 5 Nail Pouch Belts with hammer loop
- 1 x 2 Pressure Treated Wood Furring Strips on 6' centers
- 8d hot dipped galvanized common Steel Nails for use as fasteners
- #10 screws, galvanized steel, 2-1/2 inches long
- 2 inch Roofing Tape, adhesive with polypropylene liner or aluminum foil faced 2" tape

#### Additional Equipment per Team (20 Man)

- 1 Extension Ladder (20')
- 1 Cross Cut Hand Saw (24" to 30")
- 1 7¼" Circular Saw
- 1 50' Extension Cord w/ground

### **11.3 EMPLOYMENT STRATEGY**

Utilize VOLAGs away from contracted work crews as it may be perceived as they are taking work away from the contractors. As stated above they may be used for properties in outlying areas or for high priority properties.

## **12.0 INTERNAL REVIEW**

The Internal Review function serves USACE commanders, business line managers, and support office managers with professional advice on audit, risk management, business process, and management control issues. Auditors perform audits and reviews as requested by commanders, business line managers, and support office managers. Additionally, auditors perform reviews required by regulation and law.

A commander may request that Internal Review auditors monitor a mission from the start to prevent contractual problems before they happen and to make sure USACE and contractors are abiding by the contracts.

### **13.0 ETHICS**

An employee shall not solicit or accept any gift or other item of monetary value from any person or entity seeking official action from doing business with, or conducting activities regulated by the employee's agency or whose interests may be substantially affected by the performance or nonperformance of the employee's duties. Should an employee have questions he/she should ask immediately through the chain of command.

1. Legally Controlling Authority is 5 CFR Part 2635, Standards of Conduct for employees of the Executive Branch.
2. Illegal activity could lead to loss of job, loss of reputation and jail time
3. Don't do it, you will be caught.

**APPENDIX A**  
**GLOSSARY OF TERMS**

## APPENDIX A – Glossary of Terms

<b>Acronym</b>	<b>Description</b>
AAR	After Action Report
ACI	Advanced Contracting Initiative
AO	Action Officer or Area of Operations
AOR	Area of Response
ARF	Action Request Form
ASTM	American Society for Testing Materials
ATL	Assistant Team Leader
CDX	Exterior construction plywood
CEEIS	Corps of Engineers Enterprise Infrastructure Services
CFR	Code of Federal Regulations
CO	Commanding Officer
CONUS	Continental United States
CS	Contracting Specialist
D-/+	Day before or after disaster
DAC	Department of Army Civilian
DCE	Defense Coordinating Element
DCO	Defense Coordinating Officer
DHS	Director of Homeland Security
DRC	Disaster Recovery Center
DSC	Disaster Service Center
DSR	Damage Survey Report
DTOS	Deployable Tactical Operations System
EEI	Essential Elements of Information
EFO	Emergency Field Office
EM	Emergency Management (Corps) or Engineering Manual (Corps)
EngLink	<a href="https://englink.usace.army.mil">https://englink.usace.army.mil</a>
EOC	Emergency Operations Center
ER	Engineer Regulation - Corps
ERT	Emergency Response Team
ERT-A	Emergency Response Team - Advance
ESF	Emergency Support Function
FAC	Family Assistance Center (FEMA)
FAD	Funding Acquisition Regulation
FAQ	Frequently Asked Questions
FAR	Federal Acquisition Regulation
FCO	Federal Coordinating Officer (FEMA)
FEMA	Federal Emergency Management Agency
FEST	Forward Engineer Support Team
FEST-A	Forward Engineer Support Team - Advance
FEST-M	Forward Engineer Support Team - Main
FOSA	Federal Operations Staging Area
FRAGO	Change or amendment to a previous operational order

GFM	Government Furnished Material
GIS	Geographic Information Systems
GPS	Geographic Positioning System
HQ	Headquarters
ICS	Incident Command System
IM	Information Management
JFO	Joint Field Office
JIC	Joint Information Office
LM	Logistics Management
LNO	Liaison Officer
METL	Mission Essential Task List
MHE	Material Handling Equipment
MM	Mission Manager
MOB	Mobilization Centers (FEMA)
MS	Mission Specialist
NIMS	National Incident Management System
NRCC	National Response Coordinating Center
OCONUS	Outside of Continental United States
OPORD	Operational Order
PDT	Project Delivery Team
PMBP	Project Management Business Process
POC	Point of Contact
PRT	Planning and Response Team
QA	Quality Assurance Specialist
RE	Resident Engineer
RFO	Recovery Field Office
ROE	Right of Entry
SBA	Small Business Administration
SFO	Support for Others
SITREP	Situation Report
SME	Subject Matter Expert
SOP	Standard Operating Procedure
TL	ESF #3 Team Leader
UOC	USACE Operations Center
USACE	U.S. Army Corps of Engineers
VOLAG	Volunteer Agency

**APPENDIX B**  
**RIGHT OF ENTRY**

## APPENDIX B – Right of Entry Form

GPS Coord. _____	Use ballpoint or roller ball pens:	ROE No. _____
<p style="text-align: center;"><b>ESTIMATED QUANTITY</b></p> Temporary Roofing Cover: _____ SF 2" X 4" X _____ LF Plywood: _____ SF _____	<p style="text-align: center;"><b>FINAL QUANTITY</b></p> Temporary Roofing Cover: _____ SF 2" X 4" X _____ LF Plywood: _____ SF _____	<p style="text-align: center;"><b>SITUATION CODES (circle as appropriate)</b></p> DSQ Disqualified      WC Work Complete OS Out of Scope      DO Done by Others BR Beyond Repair      SN Special Needs
<p>QA Inspector _____  <small>Print Name/Date</small></p> <p style="text-align: center;"><b>SKETCH</b></p>          	<p style="text-align: center;"><b>Print and sign name(s)</b></p> Final QA Inspector: _____ <small>Print Name/Signature/Date</small> Final Contractor Rep: _____ <small>Print Name/Signature</small> Prime Contractor: _____	
<b>NOTES</b>		

**RIGHT-OF-ENTRY FOR TEMPORARY ROOFING/REPAIRS**

Incident or Disaster \_\_\_\_\_

The undersigned, hereinafter called the Owner, hereby grants the UNITED STATES OF AMERICA (the "Government"), and its independent contractors, a **right-of-entry (ROE)** upon the real estate described as follows (the "Property") located in \_\_\_\_\_ County/Municipality, and described as: [Address] \_\_\_\_\_

1. **Time Period:** The ROE shall expire **60 days after** this form is signed, unless sooner cancelled.
2. **Inspection/Repairs Authorized:** The ROE is authorized to allow inspection and/or temporary repairs to the Property, including but not limited to temporary roofing. Owner consents that the Government, its employees, agents, contractors and/or representatives shall, in their sole discretion, determine the extent of the roof damaged and temporary roof coverage required at the time of installation.
3. **Disclosure of Roofing Policies:** By signing this ROE, Owner acknowledges that the following policies shall apply concerning the installation of temporary roofing on Owner's property:
  - a. Temporary roofing installation provides temporary repair for severely damaged roofs. The roofing material may not provide a watertight seal and does not guarantee a habitable structure. Leaking is possible during additional rain events. Leaking of the temporary roof after installation is considered maintenance and is the sole responsibility of the homeowner.
  - b. The life of the temporary roof is dependent on weather conditions and may be as little as 30 days. Temporary roofing may be installed with multiple wood furring strips with multiple nails to the existing roof in order to secure it, which will harm shingles and roofing beneath. Removal of the temporary roof is the responsibility of the homeowner, and will result in leaking after the nails are removed.
  - c. The temporary roofing material becomes the property of the homeowner after installation.
4. **Cancellation:** Owner may cancel this ROE only by obtaining the signature of an authorized Government or contractor representative using the procedure shown on the reverse of this form. Phone-in and verbal cancellations will not be accepted.
5. **Waiver of Liability:** The Owner acknowledges that the Government's decisions on when, where, and how to provide disaster relief to Owner's property are discretionary functions. Owner recognizes that 42 USC § 5148 states: "The Federal Government shall not be liable for any claim based upon the exercise or performance of or the failure to exercise or perform a discretionary function or duty on the part of a Federal agency or an employee of the Federal Government in carrying out the provisions of this chapter." **Owner further releases and agrees to hold and save harmless the Government, its employees, agents, contractors and/or representatives from any and all liability, damage, or loss whatsoever that may be occasioned by or through negligent acts or omissions of the Government, its employees, agents, contractors and/or representatives in inspecting and/or performing temporary repairs to the Property.**
6. **Miscellaneous:** The right-of-entry includes the right of ingress and egress on other lands of the Owner not described above, provided such ingress and egress is necessary and not otherwise conveniently available to the Government. All tools, equipment, and other property taken upon or placed upon the property by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this ROE.
7. **Privacy Act Statement:** Owner acknowledges receipt of the Privacy Act statement shown on the reverse of this form and consents to release of the information contained herein in accordance with the purposes therein stated.

**By signing this document, I certify that I am the owner of this property and/or that I am authorized to sign this right of entry (ROE) on behalf of the owner.**

Owner/Agent Signature (Date)	Mailing Address of Signer
Print Name (if Agent, <i>also</i> print Owner's name)	Phone Number of Signer (if Agent, <i>also</i> include Owner's phone)

ENG Form 1528 (Revised April 2006)

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**PRIVACY ACT STATEMENT**

**Legal Authority:** 10 USC Sec. 3013

**Principal Purposes and Probable Routine Uses:** Information is collected to make it possible for the Government, its employees, agents, contractors and/or representatives to enter your property, inspect for damage, and/or make temporary repairs, including but not limited to installation of temporary roofing. Information submitted will be shared with other government agencies, federal and nonfederal, for purposes of management of disaster relief and with independent contractors of the Government, their employees, subcontractors, and employees of their subcontractors, for official use only in accordance with the purposes stated in this right of entry (ROE).

**Whether Disclosure is Mandatory or Voluntary:** Disclosure is voluntary; however, failure to disclose the information will make it impossible for us to inspect your property and/or make temporary repairs.

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**REQUEST FOR CANCELLATION**

To cancel this ROE in advance, this cancellation form must be signed by the owner, delivered to the Army Corps of Engineers office designated to handle such actions, and acknowledged by an authorized Corps employee. Allow at least three (3) days to process.

Alternatively, the ROE may be cancelled at the Property site *by obtaining the signature of the senior Corps employee present when the crew appears for work*. If Corps personnel are not present at the Property site when the contractor crew appears for work, the ROE may be cancelled by obtaining the signature of the senior contractor representative present. Due to scheduling constraints, neither the Corps nor its contractors can provide specific dates and times when they will be available at the Property site to accept a cancellation.

It is recommended that the Owner make a copy of the signed cancellation prior to giving this form to the authorized Corps or contractor representative. The Corps will keep the original signed copy for its records. Reproduction capability may not be available at the ROE collection points.

I have read and understand the foregoing statement concerning cancellation policies. I hereby certify that my temporary roof has not been installed and I hereby request to cancel the foregoing right of entry (ROE).

Signature: \_\_\_\_\_  
Owner/Agent Date Time

Printed Name: \_\_\_\_\_

I hereby acknowledge receipt of the foregoing request for cancellation:

Signature: \_\_\_\_\_  
Corps/Contractor Representative Date Time

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_  
(if contractor, indicate prime contractor and subcontractor by whom employed)

## **APPENDIX C**

### **Operation Blue Roof Frequently Asked Questions**

## **APPENDIX C – Operation Blue Roof Frequently Asked Questions**

### **Q. What is the first step in the process for a homeowner or landlord?**

A. To get the Operation Blue Roof process started, the first thing a person has to do is go to a location where Right of Entry forms are available. Corps staff will help you fill out this simple one-page form.

### **Q. Why is a Right of Entry needed?**

A. A Right of Entry (ROE) is a legal requirement that allows Corps workers to access your property and assess damage to your home. The ROE allows contract crews to work on your roof. The ROE will also be used by the Corps to make sure the work has been completed properly. You will receive a copy of the ROE when the job is finished, or with an explanation of the reason why your home is not eligible, if the Corps worker decides that a roof repair is not appropriate for your house.

### **Q: Where does a homeowner go to sign a Right of Entry?**

A: A Designated Sign Up Center, 1-888-ROOFBLU if available or approaching a government authorized representative in a disaster area.

### **Q: Once an ROE is signed, when will the roof be repaired?**

A: We are working as fast as possible to fix roofs. We know that with every rainstorm, a home and property are exposed to more damage. That said, we can't give identify a specific day or time when a crew will come to work on a house. Workers can't be on roofs when it is very windy, raining, or there is thunder and lightning. They also cannot work at night. We will work to our maximum ability, but we recognize worker safety standards.

### **Q: How does the Corps decide which roofs get repaired first?**

A: Areas with the highest concentration of damage will likely be attended to the most quickly. We are not working on a 'first-come, first-served' basis. That would slow the process for everyone. We will reach every person who has signed a ROE form. We simply can't predict when we will reach any particular home.

**Q: If someone has medical emergency, can that repair be prioritized?**

A: We will make your home a priority within a particular work zone. That means that when our crews come to your neighborhood, your home will be one of the first to be worked on. However, we can't tell exactly when a crew will come to your neighborhood.

**Q: One house among many others was not repaired, even though an ROE was signed – what has happened?**

A: Crews are given a bundle of ROEs and sent to fulfill those jobs. If an ROE was not in that bundle, for whatever reason, the crew could not have fixed the house. While we are not working in a first-come, first-serve pattern, it may be that an ROE was not yet in the package that was given to the contractor on that occasion.

**Q: If the Army Corps of Engineers sent a crew to fix a roof, and then another hurricane blew the blue plastic off, what can be done?**

A: The Corps will fix the roof again if another ROE is signed.

**Q. Where can a Right of Entry be found for a person who is out of town?**

A. If a person has evacuated or is otherwise out of town, they or their agent (e.g. friend or neighbor) can arrange with our team to complete the form on your behalf. The property to be repaired must be a primary residence or an occupied rental property.

**Q. If a home is being rented, can a tenant sign a right of entry form?**

A. Yes, the tenant may sign the form. The tenant should bring a letter from the landlord. The letter should say the tenant has permission to sign for the landlord.

**Q. Will the work be charged to my insurance?**

A. The work is free, so insurance does not enter into the equation.

**Q. Can I call and find out the status of my request?**

A. No, once the ROE is given to the contractor, we no longer track that information.

**APPENDIX D**

**INDIVIDUAL READINESS ITEMS**

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**APPENDIX D – INDIVIDUAL READINESS ITEMS**

General list of items for deployment. Additional items may be included based on previous experience.

Checklist Items	Health and Hygiene Considerations
2 Week Supply of Clothes	30 – 60 day supply of medications (non refrigerated)
2 Day supply of food (no preparation involved)	Imodium / Antacid
2 Large Trash bags	Pain Reliever
Required Personal Protective Equipment	Insect Repellant
Credit Card / \$500 - \$1000 cash	Eye Drops
Drivers License	Glasses / Contacts
Durable Power of Attorney	Sun Screen / Chap Stick
Executed Will	First Aid Kit
Bills While Away	Wet Ones
Mail / Newspapers While Away	Shot Record
Pets	
Notification to Family / Friend	
Flashlight with extra batteries	
Thumb Drive – 2-4 gig	
Personal Protective Equipment	

**APPENDIX E**

**SAFETY**

## APPENDIX E – SAFETY

### TEMPORARY ROOFING QUALITY ASSURANCE CHECKLIST

NOTE: Contractors are required to comply with requirements of EM 385-1-1 during emergency response operations. Where applicable, the attached OSHA Interim Fall Protection Compliance Guidelines for Residential Construction may be used to provide fall protection. The following are a few of the contract Safety and Occupational Health requirements which Quality Assurance personnel are expected to ensure the contractors are meeting.

1. Safety meetings for all workers shall be conducted weekly. (1.B.03)
2. Hard hats are required except when working on the roof. (5.D)
3. An adequate supply of drinking water shall be provided in all places of employment. Cool water shall be provided during hot weather. (2.B)
4. Portable ladders used as temporary access shall extend 3-ft (0.9m) above the upper landing surface. (21.D.02)
5. Ladders shall be secured by top, bottom, and intermediate fastenings as required to hold them rigidly in place and to support the loads that will be imposed upon them. (21.D.08)
6. Home made ladders are acceptable as long as they comply with ANSI A14.1 thru A14.4 as applicable (21.D.01). Minimum requirements would include:
  1. 2x4 rungs
  2. 2x4 supports for rungs
  3. Minimum 2 nails per rung
  4. 2x4 rails
  5. Rail splices
  6. Uniform rungs at 12” apart.
  7. 16” rung width
7. Before starting work, existing conditions shall be determined by inspection or a test. Such conditions shall include, but not be limited to, location and voltage of energized lines and equipment, condition of poles, and the location of circuits and equipment including power and communications lines and fire alarm circuits. (11.H.02)
8. Portable metal or conductive ladders shall not be used near energized lines or equipment. (11.H.09)
9. Ladders shall not be used to access the roof within 10 feet of the service drop.

(11.E.01.a)

10. GFCI s shall be used for circuits providing electricity to portable electrical power and hand tools.(11.C.05)

11. Slide guards shall be provided as a minimum at eave level for fall protection in accordance with the OSHA residential roofing standard. (Slide guards are 2x6 on edge nailed to a 2x4 nailed to the roof)

12 . If the residential standard can't be applied or extreme fall hazards exist, fall protection systems such as full body harness, retractable life lines attached to cable line shall be provided. (21.A.15)

13. Ladders shall be used at such a pitch that the horizontal distance from the top support to the foot of the ladder will not be greater than one-fourth the vertical distance between the points. (21.D.08)

14. Contractors shall wear appropriate footwear to prevent slips and trips. (5.A.08)

15. Caution the contractor on the hazards faced when attempting to conduct temporary roofing during windy/stormy conditions. (06.J.01)

**RECOMMENDATION:** To facilitate safe access and perform work on residential and commercial roofs, a slope / pitch indicator, available at most hardware stores (<\$10), allows the Government / Contractor to ascertain and verify the pitch and therefore determine which safety standard applies.

The OSHA Interim Residential Standard is attached for your consideration.

The United States Department of Labor  
**Occupational Safety and Health Administration**

**Interim Fall Protection Standard  
December 1999**

- I. PURPOSE.
- A. This Instruction is a plain language re-write of OSHA Instruction STD 3.1, the Agency's interim enforcement policy on fall protection for certain residential construction activities.
  - B. Fall protection requirements for residential construction are set out in 29 CFR 1926.501(b)(13). In general, that provision requires conventional fall protection for work at or over six feet. However, OSHA Instruction STD 3.1 modifies those requirements. It permits employers engaged in certain residential construction activities to use alternative procedures routinely instead of conventional fall protection. No showing of infeasibility of conventional fall protection is needed before using these procedures. A fall protection plan is required but it does not have to be written nor does it have to be specific to the jobsite. Different alternative procedures are specified for different activities.
- II. SCOPE. This Instruction applies OSHA-Wide.
- III. CANCELLATION. OSHA Instruction STD 3.1, Interim Fall Protection Compliance Guidelines for Residential Construction, dated December 8, 1995, is cancelled.
- IV. REFERENCE. 29 CFR Part 1926 Subpart M.
- V. ACTION INFORMATION.
- A. Responsible Office. Directorate of Construction.
  - B. Action Offices. National, Regional, and Area Offices
  - C. Information Offices. State Plan Offices, Consultation Project Managers
- VI. FEDERAL PROGRAM CHANGE. This Notice describes a Federal OSHA program change for which State adoption is not required.
- VII. BACKGROUND. On December 8, 1995 OSHA published an interim fall protection compliance policy for fall protection for certain residential construction activities, pending further rulemaking on Subpart M. This Notice is a plain language re-write of that policy; it does not make substantive changes to the policy. The Agency will solicit public comment on fall protection issues in residential construction in an

Advance Notice of Proposed Rulemaking on Subpart M. After analyzing those comments, we will re-evaluate this policy.

VIII. AVAILABILITY OF ALTERNATIVE PROCEDURES. Alternative procedures are available to employers who are (1) engaged in residential construction, and (2) doing one of the listed activities.

A. Definition of "residential construction."

1. For purposes of this instruction, an employer is engaged in residential construction where the working environment, materials, methods and procedures are essentially the same as those used in building a typical single-family home or townhouse.
2. Residential construction is characterized by:
  - Materials: Wood framing (not steel or concrete); wooden floor joists and roof structures.
  - Methods: Traditional wood frame construction techniques.
3. In addition, the construction of a discrete part of a large commercial building (not the entire building), such as a wood frame, shingled entranceway to a mall, may fit within the definition of residential construction. Such discrete parts of a commercial building would qualify as residential construction where the characteristics listed above are present.

B. Listed Activities and Alternative Procedures.

There are four groups of residential construction activities for which alternative fall protection plans are available. Each group has its own set of alternative procedures and will be discussed in Sections IX through XII. The groups are:

1. GROUP 1. Installation of floor joists, floor sheathing, and roof sheathing; erecting exterior walls; setting and bracing roof trusses and rafters.
2. GROUP 2. Working on concrete and block foundation walls and related formwork.
3. GROUP 3. This group consists of the following activities **when performed in attics and on roofs**: installing drywall, insulation, HVAC systems, electrical systems (including alarms, telephone lines, and cable TV), plumbing and carpentry.

4. GROUP 4. Roofing work (removal, repair, or installation of weatherproofing roofing materials such as shingles, tile and tar paper).

C. Questions.

- Do any of these plans have to be written and site specific? No.
- Does the employer have to determine that conventional fall protection is infeasible before being permitted to use an alternative procedure? No.

IX. ALTERNATIVE PROCEDURES FOR GROUP 1: INSTALLATION OF FLOOR JOISTS, FLOOR SHEATHING, AND ROOF SHEATHING; ERECTING EXTERIOR WALLS; SETTING AND BRACING ROOF TRUSSES AND RAFTERS.

The alternative measures for this group are set out in Appendix E to Subpart M. Appendix E requires the employer to implement a Fall Protection Plan. Such a plan must lay out the safest procedures to be followed at the work site to prevent falls.

Although the plan need not be in writing, it must be communicated to all employees on site who might be subject to fall hazards.

NOTE: Height Limitation: The Appendix E plan may only be used on structures up to three and a half stories or 48 feet (including basement, two finished levels, attic). The 48' measure is from the base of the building, at the lowest ground level (including any excavation), to the point of greatest height. The following are the required elements of the Plan:

- A. General Requirements For Group 1 Activities. Training, Implementation/ Supervision By Designated Individuals, Controlled Access Zones, Plan Administration (required for all Group 1 activities).

0. Training

Each employee performing work in Group 1 activities must be trained in the requirements of the Plan. The employer must ensure that the employees (1) understand the procedures and follow the instructions of the crew supervisor or foreman; (2) are able to recognize unsafe/hazardous conditions and are to report them to the employer; (3) can recognize when compliance with the Plan would create a greater hazard and are instructed to inform the Competent Person before proceeding when that occurs. Training and retraining violations shall be cited under 29 CFR 1926.503(a) and 1926.503(c). Subsection 1926.503 (b) may not be cited for residential construction.

NOTE: Any concerns raised by employees at any time during construction must be addressed (determined to be valid or not) before work proceeds.

1. Implementation/Supervision.

a. Competent Person.

The employer must designate a Competent Person, who will be charged with implementing the Plan. The Competent Person must continually monitor compliance with the Plan, including the provision of training and the proper use of Controlled Access Zones.

b. Qualified Person.

The employer must designate a qualified person to approve any changes to the Plan.

c. Crew Supervisor/Foreman.

The employer must designate a crew supervisor or foreman and charge him or her with the responsibility of immediately correcting any unsafe practice or condition.

2. Controlled Access Zones.

For purposes of this Instruction, a Controlled Access Zone (CAZ) restricts access to a clearly designated area where a Group One activity (installation of floor joists, floor sheathing, roof sheathing; erecting exterior walls; setting and bracing roof trusses and rafters) is taking place. The CAZ must meet the following requirements:

a. Boundaries.

The competent person shall determine the boundaries of the CAZ and clearly mark them with signs, wires, tapes, ropes or chains.

b. Monitor.

The crew supervisor/foreman shall monitor the workers in the CAZ to ensure that they do not engage in unsafe practices.

c. Restricted Access.

Access to the CAZ must be restricted to authorized entrants. An authorized entrant is a worker who has received the training described above. The competent person must identify each entrant as an authorized entrant after the employee has successfully completed the training.

d. Final Check.

Before work begins in the CAZ, the competent person must ensure that all protective measures in the Plan have been implemented.

3. Plan Administration.

a. Employer Enforcement.

The employer is required to enforce the Plan. The crew supervisor/foreman, as well as individuals in the Safety and Personnel Department, must have the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the requirements of the Plan. Unsafe practices or conditions must be corrected immediately.

b. Changes To The Plan.

-- **Designation of qualified person:** the employer must designate a qualified person to approve changes to the Plan.

-- **Approval required:** changes to the Plan may not be made unless approved by the qualified person.

-- **Plan Review:** the qualified person must review the Plan as the job progresses to determine if additional practices, procedures or training need to be implemented. The employer shall notify and, if necessary, train workers in the new procedures.

c. Accident Investigations/Plan Review.

All accidents resulting in injury to workers shall be reported and investigated. To help prevent further accidents, the investigation must be documented so that the cause and means of prevention can be identified. In the event of a fall or other serious incident, the Plan shall be reviewed to determine if additional practices, procedures, or training need to be implemented.

B. Additional Requirements For Specific Group (1) Activities.

0. Installing Roof Trusses and Erecting Rafters.

. Walls Up To 8 Feet.

Interior scaffolds must be installed along the interior wall, below the area where the trusses/rafters will be located. This can often be accomplished with "sawhorse" scaffolds constructed of 46 inch sawhorses and 2 x 10 planks.

a. Walls Over 8 Feet.

If using scaffolds and ladders throughout the process would create a greater hazard, the following general requirements and specific procedures apply.

(1). Walls over 8 feet. General requirements.

(a) Falling Objects/Restricted Access.

Once truss/rafter installation begins, workers not involved in that activity shall not stand or walk below or adjacent to the roof opening or exterior walls in any area where they could be struck by falling objects.

(b) Bracing.

Trusses/rafters must be adequately braced before any worker may use them as a support.

(c) Designated, Trained Workers.

The employer must designate the trained workers who will work on the top plate, and those who will work on the peak.

(d) Restricted Duties.

Top plate workers shall have no other duties during truss/rafter erection.

(2) Procedures for working on the top plate.

(a) Installing The First Two Trusses.

The first two trusses/rafters must be set from ladders. The ladders must lean on side walls at points where the walls can support the load imposed by the ladder and worker. After the first two trusses/rafters have been set, a worker will climb a ladder onto the interior top plate to secure their peaks.

(b) Remain On The Top Plate.

Workers will remain on the top plate and use the previously stabilized trusses/rafters as support while the other trusses/rafters are erected.

(3) Procedures for working at the peak.

(a) When Workers May Work On Peaks/Ridge Beam.

Workers detaching trusses from cranes or securing trusses at the peaks may be positioned at the peak of the trusses/rafters. Workers may be stationed on the top of the ridge beam where that is the only feasible way to secure rafters to the ridge beam.

(b) Stable Work Position

Workers at the peak, in the web of trusses, or on top of the ridge beam shall work from a stable position. They must either sit on a ridge seat (or the equivalent) or position

themselves in previously stabilized trusses/rafters and lean into, and reach through, the trusses/rafters.

(c) Limited Fall Hazard Exposure.

Workers must not remain on or in the peak/ridge any longer than necessary to complete the task safely.

1. Roof Sheathing Operations. The competent person must determine when the roof system is stable enough to support a conventional fall protection system anchorage. The following provisions apply until the roof system can be used as an anchorage point; at that time personal fall arrest systems must be used.

- . Qualified Workers.

- . Only qualified workers shall install roof sheathing.

- a. Secure Footing/Weather.

- a. The employer must ensure that workers remove slip hazards before walking on sheathing. Such measures include removing mud from shoes or boots. When wet weather is present, roof sheathing shall be suspended unless safe footing can be assured. If winds exceed 40 miles per hour, sheathing operations are to be suspended, unless wind breakers are erected.

- b. Staging of Materials.

- b. To minimize exposure to fall hazards, materials must be staged so that workers on the roof have quick and safe access to them.

- c. Falling Objects/Restricted Access.

- c. Workers not involved in roof sheathing shall not stand or walk below or adjacent to the roof opening or exterior walls where they could be struck by falling objects. The competent person shall clearly designate the restricted area before placement of the first piece of sheathing. The competent person may order a brief halt to the sheathing work to allow other workers to pass through the restricted area, as long as suspending work does not create a greater hazard.

- d. Slide Guards.

- d. -- **Bottom Row:** The bottom row of roof sheathing may be installed by workers standing in truss webs and leaning over the sheathing. After the bottom row is installed, a slide guard of at least four (4) inches nominal in height shall be

securely attached to the roof. It must extend across the full width of the roof.

-- **Slide Guard Intervals: Roof Pitch Up To (and including) 9 in 12:** Additional slide guards are required at 13 foot intervals as successive rows of sheathing are installed.

-- **Slide Guard Intervals: Roof Pitch Over 9 in 12:** Additional slide guards are required at four foot intervals.

NOTE: These slideguard requirements, which come from Appendix E, differ from those for Group 4 Activities (roofing work).

## 2. Installation of Floor Joists and Floor Sheathing.

- . Designated, Trained Workers.  
The employer must designate the trained workers who will do this work.
- a. Staging of Materials.  
To minimize exposure to fall hazards, materials must be staged so that workers have quick and safe access to them.
- b. Restricted Access.  
While this work is taking place, workers not directly assisting in it shall not be permitted within six (6) feet of the leading edge.
- c. Installation Process: Floor Joists/Trusses.  
The first floor joist or truss must be rolled into position and secured by workers on the ground, ladders, or sawhorse scaffolds. Successive joists/trusses must be rolled into place. They are then to be secured from a platform. The platform is to be built from a sheet of plywood laid over the previously secured floor joists or trusses.
- d. Installation Process: Floor Sheathing.  
The first row of floor sheathing must be installed by workers on the ground, ladders, or sawhorse scaffolds. After the first row of sheathing has been installed, workers shall work from the established deck.

## 3. Erection of Exterior Walls.

- . Designated, Trained Workers.  
The employer must designate the trained workers who will do this work.

- a. **Warning Line.**  
A painted warning line six (6) feet from the perimeter will be clearly marked before any wall erection activities take place.

NOTE: As discussed above, this work must be done within a CAZ. A crew supervisor/foreman is required to monitor this work and warn anyone who approaches the unprotected edge. The warning line does not replace the monitor; it is an additional safety measure.

- b. **Staging of Materials.**  
To minimize exposure to fall hazards, materials must be staged so that workers have quick and safe access to them.

- c. **Limit Fall Hazard Exposure.**  
Workers constructing exterior walls shall complete as much cutting of materials and other preparatory work as possible away from the edge of the deck.

**NOTE: Wall openings (more than six feet above the lower level), floor holes and roof holes:** As soon as sheathing has been installed around a floor hole, roof hole, or wall opening that is not going to be sheathed (such as a hole for a doorway, stairwell or skylight), it must be covered, or protected by a guardrail.

X. **ALTERNATIVE PROCEDURES FOR GROUP 2: WORKING ON CONCRETE AND BLOCK FOUNDATION WALLS AND RELATED FORMWORK.**

This Instruction specifies the alternative procedures for protecting employees working from the top surface of block foundation walls, concrete foundation walls, and related form work. These procedures are:

- A. **Trained Workers Only.**  
Only trained workers shall be allowed to work on the top of the foundation wall/form work, and only as necessary to complete the construction of the wall.
- B. **Adequate Support.**  
All formwork shall be adequately supported before any worker may work on top of the form work.
- C. **Bad Weather.**  
When adverse weather (such as high winds, rain, snow, or sleet) creates a hazardous condition, operations shall be suspended until the hazardous condition no longer exists.

- D. Staging of Materials/Equipment.  
Materials and equipment for the work shall be conveniently located to the workers on the top of the foundation/formwork.
- E. Impalement Hazards.  
Materials and other objects which could pose impalement hazards shall be kept out of the area below where workers are working or shall be properly guarded.

XI. ALTERNATIVE PROCEDURES FOR GROUP 3: THIS GROUP CONSISTS OF THE FOLLOWING ACTIVITIES **WHEN PERFORMED IN ATTICS AND ON ROOFS**: INSTALLING DRYWALL, INSULATION, HVAC SYSTEMS, ELECTRICAL SYSTEMS (INCLUDING ALARMS, TELEPHONE LINES, AND CABLE TV), PLUMBING AND CARPENTRY.

This Instruction specifies the procedures for this group. They are:

- A. Trained Workers Only.  
Only trained workers shall be allowed to work in attics and on roofs, and only as necessary to complete the construction of the system being installed.
- B. Staging of Materials.  
Materials and equipment for the work shall be located conveniently close to the workers.
- C. Impalement Hazards.  
Materials and other objects which could pose impalement hazards shall be kept out of the area below where workers are working, or properly guarded.
- D. Restricted Access.  
While attic or roof work is in progress, workers not involved in such work shall not stand or walk below or adjacent to any openings in the ceiling where they could be struck by falling objects.
- E. Bad Weather.  
When adverse weather (such as high winds, rain, snow, or sleet) creates a hazardous condition, operations shall be suspended until the hazardous condition no longer exists.

NOTE: The provisions of this Instruction do not apply to interior finishing work when done outside of attics or roofs areas. Subpart M applies to such work with respect to stairways, stairway openings, walkways, floor or window openings, floor holes or other elevated openings or open sides.

XII. ALTERNATIVE PROCEDURES FOR GROUP 4: ROOFING WORK (REMOVAL, REPAIR, OR INSTALLATION OF WEATHERPROOFING ROOFING MATERIALS SUCH AS SHINGLES, TILE AND TAR PAPER).

Restriction on Application for Roofing Work. The alternative procedures in this Instruction may only be used for this work where: (a) the roof slope is 8 in 12 or less, **and** (b) the fall distance, measured from the eave to the ground level, is 25 feet or less.

A. General Requirements.

0. Trained Workers Only.

Only workers who have been trained to be proficient in the alternative methods of fall protection shall be allowed onto the roof. In addition, each affected employee shall be trained to ensure specific awareness of the fall hazards associated with work on roofs with rake edges ("rake edges" are inclined roof edges, such as those on the gable end of a building).

1. Slip Hazards

The roof surfaces shall be inspected for slipping hazards. The employer shall either eliminate any such hazards or take effective measures to have workers avoid them. The employer shall have workers wear appropriate footwear to reduce the potential for slipping.

2. Bad Weather.

When adverse weather (such as high winds, rain, snow, or sleet) creates a hazardous condition, roofing operations shall be suspended until the hazardous condition no longer exists.

3. Roof holes/openings.

The employer shall have any damaged portions of the roof deck repaired as soon as practicable. Any holes (including skylight openings) or other areas where employees would not have safe footing shall be covered or surrounded by guardrails that comply with the requirements of 1926.502.

4. Ladders/Scaffolds.

If ladders or scaffolds are used, they shall be erected and maintained in accordance with the requirements of Subparts X and L of OSHA's construction standards. In addition, employees shall be trained in accordance with the requirements of Subparts X & L.

5. Access To Roof.

Employers shall not allow workers to ascend or descend the roof's slope within 6 feet of the rake edge except where that limitation would prevent the performance of work.

6. Location of Materials.  
Supplies and materials shall not be stored within 6 feet of the rake edge, or three feet where tile roof systems are being installed.
  7. Impalement Hazards.  
The area below the eaves and rakes shall be kept clear of materials and other objects which could pose impalement or other hazards, or properly guarded.
- B. Safety Monitors and Slide Guards (for roofs with an eave height of up to and including 25 feet).
0. Roof Slope (Any Roof Type): Up to 4 in 12. The employer must use either a safety monitoring system that complies with 1926.502, or roofing slide guards. If slide guards are used, they must be built and installed in accordance with the requirements set out below.
    1. Roof Slope (Except Tile or Metal Roofs): Over 4 in 12 (and up to 8 in 12): Slide guards are required.
    2. Roof Slope (Tile or Metal Roofs): Up to (and including) 8 in 12: The safety monitoring system may be used instead of slide guards.
    3. Roof Slope (Any Roof Type): Over 8 in 12: Alternatives to the requirements of the standards are not available.
    4. Eave Height Over 25 feet (Any Slope, Any Roof Type): Alternatives to the requirements of the standards are not available.
- C. Slide Guards: Requirements for Materials, Configuration and Installation.
0. Roof Slope: 6 in 12 or less:
    - . Material. All slide guards must be constructed of 2"x 6" (nominal) stock.
    - a. Installation. No more than three rows of roofing material (installed across the lower eave) shall be applied before installing the slide guards. The roof jacks (or similar supports) shall be installed using nails long enough to withstand an employee sliding into the guard.
    - b. Configuration. The face of the slide guard must be perpendicular (about 90 degrees) to the surface of the roof. There must be continuous slide guards along the eave.
  1. Roof Slope: Over 6 in 12 (up to and including 8 in 12):
    - . Material: 2"x 6" stock.

- a. Installation: Continuous slide guards shall be installed along the eave, as described above. Additional slide guards shall be installed below each work area at intervals not to exceed eight feet. They shall be installed using the following procedure: the employee, while standing on the slide guard below, secures the roof jacks for the next slide guard with nails and then installs the planks. The employee then climbs up to the new slide guard to continue the roofing work. This sequence is repeated as work proceeds up the roof.
- b. Configuration: The continuous slide guards at the eave must be at about 90 degrees to the roof surface, as described above. The additional slide guards need not be continuous -- but they must be long enough to protect the work area. They do not have to be at 90 degrees to the roof surface.
- c. Removal: Once the roofing material is installed to the ridge, the employee is to climb down to the next lower slide guard and remove the upper slide guard. The employee repeats this process down the roof until all the slide guards are removed. Only when the roofing job is completed may the slide guards at the eave be removed.

### XIII. CITATION POLICY.

If an employer (engaged in residential construction) does not provide conventional fall protection, the compliance officer must determine if STD 3-0.1a provides alternative procedures for the activity in question. If alternative procedures are available, the compliance officer must determine if they have been implemented. If there is a deficiency in the implementation of the alternative procedures, the fall hazard shall be cited as a violation of 1926.501(b)(13). No other provision may be cited for a fall hazard addressed by 1926.501(b)(13). Deficiencies in training required by 1926.20 may also be cited where appropriate.

## SAFETY AND OCCUPATIONAL HEALTH INFORMATION EXCHANGE BULLETIN

### HEAT-RELATED ILLNESSES

Have you ever suffered a heat-related illness? I have and can tell you for a fact it is no picnic. My case occurred when I was 25 years old and doing roof work in Southeast Georgia. I really had no idea what was happening to me except that I became very nauseous and almost passed out. (This tends to be somewhat dangerous when you're standing on a two-story roof.) Luckily, I had a friend working with me who kept me from falling off the roof. I felt the after affects of heat exhaustion for days. The truth is a heat related illness could happen to anyone who doesn't take simple precautions.

#### **What causes heat-related illness?**

A heat related illness such as heat cramps, heat exhaustion or the most serious, excessive sweating and a depletion of necessary body chemicals cause heatstroke. Sweating is the body's way of cooling itself. However, profuse sweating can deplete the body's water supply along with necessary chemicals found in the body.

#### **Signs, symptoms and first aid.**

**Heat cramps** - are caused primarily by excessive loss of salt from the body. Symptoms include muscle cramps of the abdomen, legs or arms. First aid includes moving the victim to a shaded area and loosen clothing. Have the victim drink lots of water (at least one quart). It will not hurt to add a small amount of salt to the water. Recommend the victim take the rest of the day off to go to the hotel and rest. If symptoms continue, seek medical treatment.

**Heat exhaustion** - is caused by excessive salt depletion and dehydration. Symptoms include profuse sweating, headache, tingling sensation in the extremities, weakness, and loss of appetite, dizziness, nausea, cramps, chills, and rapid breathing. First aid includes loosening or removing clothing, elevate legs, pour water on victim, have victim drink water, fan victim and seek medical treatment.

**Heatstroke** - is a medical emergency. Symptoms usually are patterned after heat exhaustion however; the skin may be hot and dry. Victim can suddenly lose consciousness and have seizures. First aid includes moving victim to the shade, immersing in water (add ice to water if possible), and elevating feet. 911 should be called immediately and person should be sent to hospital for further treatment.

### **What can you do to protect yourself?**

Use common sense when protecting yourself from heat-related illnesses.

1. Stay in the shade as much as your job will allow.
2. Drink plenty of water. If possible, keep a cooler of ice water in your vehicle. A person working outside on construction related work should drink 12-15 quarts of water per day. (Dark colored urine is an indicator that you are not drinking enough water.) Alcohol and soft drinks are not a substitute for water.
3. Keep your body in balance by eating regular meals and getting 6-8 hours of sleep per night.
4. Use sunscreen to keep from getting sunburned. (Sunburned skin will inhibit sweating and may cause the body to overheat.)

Although a person should be able to identify heat related problems in themselves, quite often it is another person that notices the problem. Because of this, I recommend you use a buddy system to keep an eye on each other. If you have any of the warning signs mentioned above, please take them serious get yourself treated.