



Federal Emergency Management Agency
Summary Meeting Notes from Second Meeting
of the Expert Panel on
Cost Estimating for the Public Assistance Program

September 26, 2001

Loews L'Enfant Plaza Hotel
Monet IV Conference Room
480 L'Enfant Plaza, S.W.
Washington, DC 20042

ATTENDEES

Panel Members

Laurence W. Zensinger	Panel Co-Chair, Federal Emergency Management Agency (FEMA)
Robert L. Edelblut, Sr.	National Society of Professional Engineers
Claudette Ford	American Public Works Association (APWA)
Kai 'opua Fyfe	American Society of Professional Estimators (ASPE)
Charles Harper	American Institute of Architects
G. Michael Hoover	Associated General Contractors of America
Jon A. Oshel	National Association of County Engineers
Norman H. Roush	American Association of State Highway and Transportation Officials

FEMA Technical Support

J. David Duffer	Expert Panel on Cost Estimating, Executive Officer, FEMA
James A. Walke	FEMA

Members of the General Public

Dick Buck	FEMA
Gary Dartlett	National Rural Electric Cooperative Association
Andrea Fisher	APWA
Robert Hobart	Fluor Federal Services (FFS)
Melissa Howard	FEMA
J. Brian Leap	FFS
Joseph Majewski	ASPE

Bill Manfredonia	ASPE
Melinda K. McDonough	FEMA
Jenny Novillo	Emergency Response Program Management Consultants (ERPMC)
Greg Ormsby	Nationwide Infrastructure Support Technical Assistance Consultants (NISTAC)
Beverly Perrell	ASPE
William Quade	ERPMC
Ken Rock	ERPMC
Charles Stuart	FEMA

Background

The Disaster Mitigation Act of 2000 (Public Law 106-390), Section 406 (e), directs the Federal Emergency Management Agency (FEMA) to establish a methodology, consistent with industry practices, for estimating the cost to repair, restore, or replace eligible public facilities that are damaged during a major disaster. To accomplish this objective, FEMA established an expert panel (Panel), consisting of industry, State, and local representatives to recommend cost estimating procedures. A charter signed by the Director of FEMA on April 1, 2001 was filed with the General Services Administration's Office of the Committee Management Secretariat, per the requirements of the Federal Advisory Committee Act (FACA). The first meeting of the Panel was held in Arlington, Virginia on June 26 – 27, 2001 and was open to the public. The second meeting of the Panel, held on September 26, 2001, was conducted in Washington, District of Columbia and, like the first meeting, was open to the public.

The purpose of the second meeting was for Panel members to compare and contrast the Cost Estimating Format (CEF) for Large Projects developed by FEMA with estimating methods used by the American Society of Professional Estimators (ASPE). The Panel also selected and endorsed a cost estimating methodology and determined the level of technical expertise and training guidance required for uniformly applying it. Additionally, the Panel considered a proposed update to FEMA's Engineering and Design Services Curves (A and B) and the content of its Recommendation Report to the Director of FEMA.

Introductory Remarks

Mr. Laurence Zensinger, Panel Co-Chair opened the meeting by welcoming participants and noting that Mr. Albert Ashwood, Panel Co-Chair of the National Emergency Management Association (NEMA) was unable to attend the meeting due to other NEMA matters requiring his attention in the aftermath of the September 11, 2001 terrorist attacks upon the United States of America. Mr. Zensinger stated that Mr. Ashwood expressed his personal acknowledgement and appreciation to each Panel member for their willingness to proceed with the peoples' business during such volatile and dangerous times.

Mr. Zensinger provided the Panel with a brief overview of FEMA activities at the World Trade Center in New York. He also provided a review of the previous Panel meeting and the action

items that resulted from that meeting. In particular, he reviewed the Panel's request for a comparative analysis of FEMA's CEF with the cost estimating methods used by ASPE. Mr. Zensinger outlined other key goals of the meeting (Attachment A):

- (1) endorse a cost estimating methodology for estimating the cost of repairing or replacing a facility consistent with industry practices,
- (2) discuss the level of technical expertise and training guidance required to uniformly apply the recommended cost estimating methodology and instrument to maximize their accuracy and national applicability,
- (3) discuss the proposed update to FEMA's Engineering and Design Services Curves (A and B) and,
- (4) discuss the Recommendation Report and draft executive summary (that would be prepared based on the results of the Panel meetings) to include recommendations to the Director concerning procedures for cost estimating. In particular, Mr. Zensinger said that he wanted to talk about the tone of the report and to be sure all Panel members are comfortable with it. He reminded the Panel that the overall objective of FEMA's effort is to use an estimating methodology that will allow it to cut red tape and more quickly meet the needs of applicants.

With regard to meeting protocol, Mr. Zensinger said that comments from the general public would be welcomed at the end of the day. He added that in response to the Panel's request, there would be two presentations:

- A presentation by America Society of Professional Estimators (ASPE) of its analysis of a comparison of the two methodologies; and
- A review by the Federal Emergency Management Agency (FEMA) of the result of its comparative analysis of the CEF and ASPE cost estimating methodologies.

Mr. Zensinger then welcomed Mr. Jon A. Oshel of the National Association of County Engineers and invited panel members to reintroduce themselves to one another.

ASPE Presentation Comparing the CEF to ASPE's Level 3 Estimate

Kai 'opua Fyfe gave a presentation on behalf of the American Society of Professional Estimators (ASPE) summarizing its views on the Cost Estimating Format (CEF) for Large Projects being used by FEMA. Mr. Fyfe noted that, in his opinion, the CEF conforms with recommended estimating practices. However, he made it clear that his remarks be considered preliminary, because the Board of Directors, Technical Boards and Standing Committees had not yet formalized the Society's findings. National meetings, which had been scheduled to complete that formalization, were postponed due to post-9/11 travel difficulties. With this caveat, Mr. Fyfe said that while there is lots of strong support for the CEF, most cautionary ASPE comments have centered around two topics:

- The need for appropriate expertise of the personnel performing the estimates; and
- Quality of the construction document data that directly affects the level of detail included in the estimate. While most reviewers like the use of the Microsoft

Excel spreadsheet in Part A of the CEF, they would prefer to use historical, and/or local cost data, rather than factored national cost data from commercial estimating manuals; and the utilization of estimating expertise from the vicinity of the disaster, where possible. This allows factors to be developed on-site, at the same location where the work would be done. Regarding the ASPE level 3 estimate that level is not designed to require sufficient construction documentation to attain the ideal +/-10% range of eventual firm bids.

Joseph Majewski, the President of ASPE, spoke at the request of Mr. Fyfe and with the Panel's permission. Mr. Majewski indicated that ASPE's Manual stresses the need for sound judgment when preparing an estimate. The Manual helps educate others on how to prepare a reliable and valid estimate. He added that everything from a house to a nuclear power plant uses all 16 Construction Specifications Institute (CSI) trade categories (divisions) that the CEF is based upon.

Mr. Fyfe assured the Panel that the formal ASPE findings would be provided as soon as possible.

General Discussion

The Panel agreed that the ASPE Manual emphasizes uniformity, ethics, and sound judgment. The Panel also agreed that there was no need to prepare every estimate as though it would wind up in litigation. There also was agreement that developing estimates in rural areas require flexibility, but if properly researched and documented, it is possible to develop a reliable estimate of what a project "should" cost without local data.

However, it was recognized that it might be difficult even for a professional estimator to make valid cost estimates in rural areas. Estimates for rural roadway projects, for example, may be "all over the map." Often, if all bids are high in a rural area relative to construction costs expected for a given project, the project is withdrawn and rebid at a later date with cost refinements reflected in the engineer's estimate. More over, due to the immediate need to restore critical infrastructure to respond to and recover from the effects of disaster, the rebidding solution normally used for capital improvement projects is not practicable.

Panelists were pleased with the generally strong support of the CEF provided by ASPE. They were gratified with the anticipation that the large group of reviewers provided by ASPE would validate what the Panel concluded at the previous meeting.

FEMA Presentation Comparing the CEF to ASPE's Level 3 Estimating Approach

J. David Duffer, FEMA, presented the results of FEMA's comparative analysis of the Cost Estimating Format (CEF) for Large Projects to ASPE's Level 3 estimating approach as prepared by the Standards Board of ASPE in its publication Standard Estimating Practice (ASPE, 5th edition, October 1998). See Appendix A for the presentation. ASPE's Level 3 estimate is a "Design Development / Budget Appropriation" level prepared from not less than 25 percent complete preliminary design drawings and draft specifications. The purpose of this estimate is to establish probable costs within the range of available information. Mr. Duffer also addressed whether a CEF estimate at an ASPE Level 3 would be comparable to an ASPE Level 5 estimate, plus or minus 10 percent (the thresholds selected by the Panel for any estimating process).

Mr. Duffer noted that a clear definition of the scope-of-work, the level of completion of the A&E effort, the estimating technique employed, and the skill of the estimator or estimating team govern the accuracy of any estimate. Estimates range in scope and detail from order of magnitude to firm fixed price contractor bids. The former are based on preliminary information while the latter are based on a complete set of plans and specifications.

CEF is a procedure to estimate eligible grant funds for reimbursement of expenses to an eligible applicant. Estimates prepared using the CEF (Instructional Guide, Version 2, October 1998) parallel the Construction Specifications Institute (CSI) Divisions of Work. The key element of the CEF is Part A and it is to be itemized to the greatest extent possible. Local pricing is brought into Part A, consisting of completed work, bid, or local costs, before going to R.S. Means cost data. Parts B through H reflect the estimator's confidence in the completeness of the Part A costs. In other words, local cost data is incorporated in Part A and parts B-H are zeroed out. If local cost data is unavailable for any of the work components, the appropriate parts (B-H) are then selected and factored into the estimate. When we have total confidence in Part A there is no need to use Parts B through H of the CEF. However, the factors used in Parts B-H are based on industry standard source data obtained from R.S. Means and the American Society of Civil Engineers. This is appropriate because the factors are generally only applied when the estimate is R.S. Means based and should be applied only when other data are not available (such as applicant provided historical cost data, an applicant's bid documents, or other average-weighted unit costs from an applicant, etc.). CEF training emphasizes the hierarchy of cost data selection, with local costs used first and FEMA cost codes used only as a last resort.

To perform the primary comparison of CEF to an ASPE Level 3, the documentation and design development criteria for both estimating methods were detailed. The supporting documentation and criteria were then compared and the similarities and differences summarized. Generally the requirements for both estimating methodologies are very similar. Site plans, dimensions, arrangements and schematics are required for both. ASPE also requires detailed preliminary plumbing, mechanical and electrical drawings as a requirement. This level of detail is not explicitly defined as a requirement of the CEF. Requirements for both methodologies are generally quite similar, even though the two are NOT directly comparable. The CEF focuses on costs to return damaged eligible facilities to their pre-disaster condition. In this regard, FEMA's CEF parallels the performance objective of ASPE Level 3. Under post-disaster conditions, a CEF estimate will compare favorably with other cost estimating methodologies (e.g., Building Construction Handbook, 2nd ed., 1975, McGraw-Hill Book Company; United States Department of Energy, Cost Estimating Guide, DOE G 430.1-1, Chapter 11, Maximum Upper Limit Values; Association for the Advancement of Cost Engineering, Cost Estimate Classification System, Recommended Practice No. 17R-97; etc.) and produce an estimate of approximately the same magnitude and confidence level.

The results of FEMA's review of ASPE Estimating procedures (Levels 1 through 6) and their purpose and comparison to the CEF found that, indeed, the CEF process does parallel the ASPE Level 3 process in: (1) level of contingency (design phase scope contingency), and (2) the type and level of design documentation required. FEMA's review also found that other cost estimating approaches allow for use of factors and that the CEF Factors can be adjusted in the field based on the characteristics of specific disasters. Although ASPE's method does not specifically incorporate factors in the estimate, and indeed allows a percentage to be used for

general conditions only in levels one and two, standard estimating industry practice often involves adding a percentage of base costs to a number of items needed to put together a total cost estimate (e.g., construction cost contingencies, reserve for change orders, overhead, profit, etc.).

Mr. Duffer noted that CEF accuracy is dependent on the information available at the time of the preparation of the estimate. Repair work or other discrete work elements should generally be well defined during the initial field inspection. Retrofit/upgrade and/or hazard mitigation efforts will not be fully established until design is started or completed. If new construction is anticipated, (especially when making a repair versus replacement analysis) this will ultimately require extensive design that will not be available when the CEF is initially prepared. A combination of work types would still make the CEF parallel to an ASPE Level 3 estimate. Mr. Duffer also noted that to ensure a high level of confidence in the estimate, a clear definition of the scope of work is required, along with active participation by the applicant. To meet the ASPE level 5 criteria using the Panel's plus or minus ten percent thresholds, the Panel could consider refining the qualification criteria to include all large permanent work projects (e.g., apply the 10 percent plus and minus criteria) on the basis of all work being done for an individual applicant, rather than on a project-by-project basis. In his remarks, Mr. Duffer concluded that the CEF falls well within the range of other industry accepted cost estimating systems. He noted that the CEF Instructional Guide, Version 2 (November 1998) would need to be updated to include lessons learned in the field.

General Discussion of FEMA's Presentation

There was considerable discussion about the timing of estimates. Even in the aftermath of a disaster, there is a need for FEMA to work closely with the State when inspecting sites and developing estimates. Technical personnel (e.g., engineers, architects, etc.) are required to meet with applicants who have suffered disaster damages. FEMA needs to get people out there quickly who know how to estimate and who know how to relate to the local people. There was general consensus about the need for applicant participation in the estimating process, as well as the need for qualified estimators (i.e., a team approach).

With regard to the quality of Project Officers, FEMA makes a preliminary determination after each disaster about the number of estimators and the areas of expertise required for the work. In response to questions about the qualifications and training required for estimators, FEMA indicated that different levels of expertise might be needed for different types of projects. Some projects, like culvert washouts, are relatively simple and a Civil Engineer with road and bridge experience would normally be used. Other projects require significant, more specialized technical expertise (e.g., a geotechnical engineer to estimate the eligible costs for repairing landslides).

The character and knowledge of individual estimators (i.e., POs, and Public Assistance Coordinators, or PACs) are very important. They need to have very high ethical standards. While all participants agreed that the training and qualifications of estimators is important, clearly not everyone has the same level of training and experience. FEMA must make an initial judgment about the level and mix of technical expertise it sends to a disaster. This initial judgment may need to be modified, as more information about damages becomes known. It was

noted that FEMA does not have control over personnel the States send out to work with FEMA on the response and recovery process.

Panelists were interested in the disparity between larger urban applicants and smaller rural applicants who may be unable to provide the participating local funding match required by the State. They believed that FEMA should try to be more compassionate than most insurance companies. FEMA responded that while one of its goals is to develop a more robust communication methodology that will work for the applicants to let them know about the resources at their disposal, the Stafford Act is quite explicit on the extent of supplemental assistance that FEMA can direct towards an eligible applicant for eligible work. FEMA recognizes that projects with a predisposition toward known problems (such as geotechnical flaws, hidden building damage, differing site conditions, etc.) need to be able to include appropriate architectural and engineering expertise for the contemplated work effort as may be required. Efforts such as these must be done early in the evaluation process, before the CEF is used and the Project Worksheet completed.

Panelists noted that FEMA should think broadly about the scope and content of its training. There is a need for applicants and their staff, and State personnel, to receive training about Project Worksheet documentation requirements and the recovery process early in the response effort. Training in the immediate aftermath of a disaster is not always possible to do. Sometimes even small initiatives can make a big difference in qualifying projects for funding. For example, basic "field etiquette" is needed, such as providing a scale for the disaster damaged object being photographed, depicting which direction is North, and explicating the essential elements of information necessary for a fully-defined undertaking as contemplated by the applicant, etc. In response, FEMA explained that it had redesigned the PA Program to provide money to applicants more quickly and to make the application process simpler than before. The redesigned PA Program was approved for implementation on disasters declared after October 1, 1998. A Final Rule was published in the Federal Register on October 12, 1999 (at 64 FR 55158) to reflect the changes that FEMA needed to put the new Public Assistance Program into effect. Specific changes to Title 44 of the Code of Federal Regulations - Part 206 include renaming documents, defining terms, adjusting responsibilities, and editing the rule in a way that makes the rule easier to read and understand. The PA Program provides the basis for consistent training and credentialing of staff (people) who administer the program; more accessible and understandable guidance and policy for participating in the grant program; improved customer service through a more efficient grant delivery process, applicant-centered management, and better information exchange; and continuing performance evaluations and program improvements. But these matters are more germane to providing money to applicants, rather than developing cost-estimates. The Panel agreed, and for the purposes of the Federal Advisory Committee, recommended that training be limited to the selected cost estimating methodology and an Emergency Management Institute (EMI) resident CEF course offering, be made available to both Federal and State staff at the National Emergency Training Center in Emmitsburg, Maryland, based on the current CEF course and training materials used by the Disaster Field Training Organization (DFTO).

One panelist expressed concern that public agencies are at a disadvantage because they cannot attract and retain qualified people to develop estimates, because they compete with the private

sector that can afford to hire the best. Hiring a permanent cadre of fully trained estimators will take a long time and be costly.

FEMA also explained that while it was possible to have its own cadre of full-time cost-estimators, the current level of funding made it highly unlikely. Instead, FEMA relies on a large group of technical assistance contractors (TACs) that have access to personnel who do frequently engage in cost estimating for all types of infrastructure work. The problem FEMA faces is that the disaster workload fluctuates continuously. To obtain full-time employees, FEMA needs to be able to justify keeping them busy all the time. It currently has the tools it needs to accomplish the job -- determining minimum qualifications, and using a combination of permanent- and disaster cadre staff, supplemented by TAC personnel, to provide appropriate resources for each disaster. In general, FEMA is able to identify the requirements it needs, articulate those needs to a highly qualified pool of personnel (including TAC), and obtain the necessary resources whenever and wherever they are needed.

Panelists agreed that FEMA's existing cost estimating methodology (i.e., the Cost Estimating Format for Large Projects) is the recommended procedure for estimating the cost of repairing, restoring, reconstructing, or replacing a facility consistent with industry practices, based on each Panelists' independent peer review and the joint-Panel deliberations undertaken to date.

The Panel also acknowledged that while all personnel are not equally qualified, they should be able to get the mission completed with proper training provided at either the DFTO or EMI level. The Panel suggested that training at the Emergency Management Institute (EMI) was preferable to training at a Disaster Field Training Office (DFTO), because of concerns with the environment (i.e., the DFO is conducive to disaster response and recovery operations, while EMI is conducive to learning). Panelists' also cautioned that FEMA and TAC personnel also have the responsibility to be aware of their own professional limitations, and this should be emphasized during the CEF resident course offering at EMI. The Panel concurred that a full-time cost estimating cadre is not required, as long as FEMA has immediate access to qualified personnel when needed. Panelists' agreed that FEMA personnel should only work within their area of expertise and agreed that establishing a person's work experience before utilizing their skills, could assist Public Assistance Coordinators (PACs) in better utilization of available technical expertise from the Federal/State resource pool. The Panel also agreed that when the updated Engineering and Design Services (Curves A and B) were received, that the CEF for Large Projects Instructional Guide, Version 2 (November 1998) should be updated to include lessons learned from the field and curves A and B.

One panelist observed that the lower-bound percentile of 15% used for simple projects in the CEF for Large Projects Instructional Guide, Version 2 (November 1998) relating to the Part C.1: Standard Design-Phase Scope Contingencies factor, did not accurately depict the actual risk of bidding a simple project.

FEMA explained that the level of completion of A&E work as a function of time can characterize the construction and the C.1 factor is designed to account for these unknowns. The unknowns gradually decrease as the scope of work is defined, details for completing the work are developed, and the project advances towards a set of construction drawings and specifications that can be used by a construction contractor.

Two levels of design development are currently considered in C.1, as follows:

Preliminary Engineering Analysis Stage: At this stage, concepts have been developed, usually without a significant level of detailing. It is difficult to accurately quantify work at this stage, and contractors would assume a relatively high level of risk in bidding a project at this time. A recommended range of 15 to 20 percent is established to allow some differentiation between simple and more complex projects.

Working Drawing Stage: At this stage, the design is more advanced, concepts have been determined, detailing is more complete, and work tasks and quantities have been readily defined. Contractors would assume a low to medium level of risk in bidding this type of project. The recommended range of 2 to 10 percent allows for some differentiation depending on the level of completeness of working drawings. A project in the preliminary working drawing stage, which would have an average level of detail and readily identifiable quantities, should be assigned a factor at the upper end of the range. A project in the final working drawing stage should be assigned a factor at the lower end of the range.

Panelists agreed that the project should be evaluated to determine the design phase at the time the estimate is prepared and that it is important to note that the C.1 contingency is intended to represent the state of the project design development at the time that the CEF is prepared. Additionally, the Project Officer responsible for developing the estimate should obtain all information necessary to prepare the CEF for the current state of project development. However, it is the sense of the Panel that the lower-bound percentile for simple projects is more realistically on the order of 7% and the C.1 factor should be revised to reflect this percentile.

Conclusion and Suggestions

Each Panelist voted on the behalf of their respective professional organizations. They unanimously endorsed the Cost Estimating Format (CEF) for Large Projects, Version 2 (November 1998) and selected the CEF as the recommended cost estimating methodology of the Public Assistance Program. With the formal vote completed, the Panel elected to move directly into making specific suggestions intended to improve the overall quality of the CEF implementation. The following are representative of the key comments made during the discussion:

- The Public Assistance Officer (PAO) needs to be able to determine the correct type of expertise required for each large project. If the required resource is not readily available, the PAO should have the skills necessary to obtain the correct type of expertise, as needed, for all large project types. The process would be similar to the mechanism that FEMA uses when there are Special Considerations issues, such as historical preservation, environmental, or insurance issues, etc. The PAO must have the ability to inject appropriate expertise anywhere in the large project formulation process as needed.

FEMA Response: FEMA often sends in a TAC Liaison to work with a PAO to determine what type of technical expertise is needed for a large project and when. In this regard, the Panel agreed with FEMA's approach.

- There is an overriding need to include PAOs and PACs in the CEF process. This step is essential in getting them to understand and support the process. Applicants and State staff also should be able to participate and get properly trained in the use of the CEF.

FEMA Response: Training was performed for the Nisqually Earthquake disaster in Olympia, Washington and for the floods in Houston, Texas with very good results. Excellent feedback was received from both State and applicant participants. FEMA agreed with the Panel's suggestion.

- Cost estimating expertise is out there in the field already. FEMA needs to be able to identify it and tap into it as needed. Cost-estimators do not necessarily have to be on the site; the key is to be able to access discipline-specific expertise. Often, the cost estimating specialists may be able to telecommute.

FEMA Response: FEMA noted that its TACs have the capability to procure technical resources relatively quickly to respond to disaster needs. The Panel agreed with FEMA's approach.

- The first estimator to visit a damaged facility needs to be a well-rounded seasoned professional, generally qualified in the entire spectrum of construction, including environmental, historical, and insurance issues. This person will then identify and call for specific types of expertise, when needed (e.g., structural engineering, demolition, brickwork, etc.), and should probably be a FEMA employee, not a contractor. FEMA really needs people familiar with demolition and hauling, earthwork, cofferdams, parks and recreation areas, paving, etc. It can still rely heavily on contractors once these important base items are covered. FEMA agreed with the Panel's suggestion.

-- lunch break --

Engineering and Design Services (Curves A & B) Status

J. David Duffer, FEMA, presented the results of his review of Engineering and Design Services Curves A and B (used for determining the percentage of Engineering and Design Services for a large project) as requested by the Panel during the first meeting of the Expert Panel on Cost Estimating for the Public Assistance Program. See Appendix A for the presentation. During the first meeting, Panel members asked FEMA to procure data from the National Society of Professional Engineers (NSPE), the American Institute of Architects (AIA), and the American Consulting Engineers Council (ACEC) as it relates to a proposed update to curves A and B. Curve A represents compensation for basic services expressed as a percentage of construction cost for projects of above average complexity and non-standard design, and curve B represents compensation for basic services expressed as a percentage of construction cost for projects of average complexity.

All three professional organizations responded and acknowledged that neither NSPE, AIA or ACEC had ever developed this kind of data; they only knew of the American Society of Civil Engineer's (ASCE) Manual 45 entitled: "Consulting Engineering: A Guide for the Engagement of Engineering Services".

According to ASCE, the existing Engineering and Design Services Curves that FEMA uses were initially developed in 1975 based on a nationwide survey of architectural and engineering (A&E) firms and were published in the first edition of Manual 45. In 1982, a nationwide survey of A&E firms was performed and updated curves were developed. In 1988, the 2nd edition of Manual 45 was published, but did not include the 1982 updated curves, because A&E firm's generally believed the curves would limit the fee structure established by some A&E firms. This matter was discussed at the highest levels of ASCE, to include the Office of the President. In 1996, the 3rd edition of Manual 45 was published, but did not include curves A and B for the very same reason previously cited. In 2001, the ASCE Committee on Professional Practice meeting was conducted in San Antonio, TX on November 10 and 11, 2001. The committee considered curves A and B for inclusion in the 4th edition of Manual 45 contemplated for publication in early 2002, based on a nationwide survey of A&E firms performed this year.

The chairman of the Committee on Professional Practice will provide curves A and B to FEMA, subsequent to the ASCE meeting in San Antonio, TX, whether or not the curves are included in the 4th edition of Manual 45. There was a general consensus among the Panelists, that the 1975 curves still being used by FEMA are lower than current engineering and construction costs. This was not important before CEF when A&E costs were adjusted to reflect actual eligible expenses. However, under CEF, a better estimate of A&E costs is necessary.

Expert Panel Comments on the Recommendation Report to Director

J. David Duffer, FEMA, distributed a rough draft of a summary Recommendation Report to the Director of FEMA with the caveat that it would be revised to capture the key Panel recommendations made during today's meeting. **Panelists unanimously agreed that most of the concerns discussed in today's meeting had been previously addressed in the CEF and noted that the process is founded on an established methodology that allows the PAO to determine the appropriate level of expertise needed on a disaster, and engages applicants early in the decision-making process when their input matters most.**

Additionally, Panelists agreed that the report should be rather brief, include pertinent graphics and other exhibits, and not turn into a long document. Panelists also agreed that the content depicted in Appendix A should also be considered for report inclusion. Panelists further indicated that the CEF procedure would be superior to the base cost estimating methodology that is being used and has been used in the past. They recognized that the CEF could be modified in the future as FEMA gains more experience with it and cost data is made available to statistically analyze it, determine correlations if possible and assess its performance. Two specific issues were identified that Panelists desired to be addressed in the report:

- The level of effort used to prepare an estimate. The concern was that it's usually best to take a little more time preparing the estimate at the outset. This improves the chances that it will not have to be revisited in the future.
- The role of the Applicant in developing the estimate. Working with the applicant early on in a disaster to discuss and agree on the scope of eligible damages would be quite helpful in reducing the need for change orders.

General Discussion

- One Panelist indicated that FEMA should group all large projects by applicant on a disaster and reconcile actual large project costs as a group, to achieve the targets of plus and minus 10 percent. Another possibility is to aggregate projects at the community level (e.g., by city, township, municipality, etc.) regardless of the applicant. However, FEMA should still retain individual project data for the record.
- There is some concern about what to do when there are only one or two bidders, as is common in a small community, because a competitive bidding environment is normally not present. There was discussion about whether FEMA needs to establish some sort of a “rider” to allow special consideration for small, rural communities. Some panelists agreed with the concept of a rider; others felt that there is no need for a rider, as long as actual local costs are applied in place at the time of the disaster. In small communities, some actual costs could be as much as 20 or 30 percent higher than the costs of similar work in large communities.

FEMA Response: FEMA noted that in the case of a small community, it would act in good faith and recognize a small community’s financial constraints early on in the process estimate accordingly. FEMA also noted that it is best to ask for assistance as soon as possible after a disaster and for the record, that it would make a special effort in small, rural communities to use local prices wherever possible. FEMA acknowledged that there may not always be a competitive bidding environment in small rural communities, including some situations where the “low bidder simply does not show up.”

Panel Recommendation: Collect and retain cost data for each project for use in analyzing results. FEMA should then incorporate CEF data into its computer system (e.g., NEMIS or a statistical analysis package, etc.) to be able to access it for analysis.

FEMA Response: FEMA indicated that it would take at least a few years to procure enough data from the Nisqually and Houston disasters to see how well the CEF performs. FEMA also is planning to use the CEF in New York for the disaster at the World Trade Center. Ultimately, some years down the line, FEMA would like to process large project grants on the basis of cost estimates alone, but acknowledged that data analysis would be required.

Next Steps

FEMA asked the Panel to consider what its requirements might be for future Panel deliberations. FEMA indicated that, with the Panel’s concurrence, it would consolidate their comments into a draft Recommendation Report and circulate it to Panel members for their review. Based on the comments, FEMA would then check with Panelists and determine if there is a need for another meeting. There was consensus among the Panelists that while the decision to meet again should remain open, there is no need to meet in relation to the tasks completed to date as depicted in the Panel’s Federal Advisory Committee Charter. FEMA asked for volunteers from the Panel to write a rough draft of the executive summary to set the desired tone of the Recommendation Report to the Director, and the Panel unanimously agreed that J. David Duffer, FEMA’s Executive Officer would draft the Recommendation Report on the Panel’s behalf.

The Panel agreed that 30 days for review, comment and approval of the draft report would be sufficient. There was agreement to use e-mail messages wherever possible to transmit electronic copies of the draft Recommendation Report so that comments could be finalized and appropriate revisions made to the report. One suggestion was to use the tracking mechanism under MicroSoft Word to make comments and to implement agreed upon changes to the report.

Closing Comments by Panelists and Members of the General Public

- Kai 'opua Fyfe: Remember, at the beginning of the disaster response, FEMA needs to send a person who is qualified in cost estimating to determine the types of technical expertise required for estimating large project costs on a disaster. ASPE thinks that ASPE certification qualifications are sound, especially since they have continuing education requirements. One of the requirements for application to the ASPE Certification Program is a minimum of 5 years experience doing estimating. Kai is willing to look at ASPE tools and documents to see what may be useful to FEMA, but does not think that a certification requirement is necessary for all FEMA estimators. Estimator expertise can also be evaluated by utilizing traditional employment industry search tools.
- John Oshel: Lots of our work is bread and butter that certainly will not require a fully certified estimator.
- Larry Zensinger: Increased exposure to the educational materials would certainly be appropriate for FEMA folks.
- Melinda McDonough: There was Panel discussion relating to the refining of the CEF process qualification criteria, in order to achieve the ASPE level 5 criteria using the Panel's selected plus or minus ten percent thresholds, but a Panel consensus was not explicitly reached. In order to evaluate FEMA's cost estimating performance against the Panel's thresholds, did the Panel decide to group all of an applicant's large permanent work projects together, rather than reconciling costs on a project-by-project basis?

Answer: Panelists discussed this important distinction and agreed that cost reconciliation and the subsequent comparison of the actual eligible costs against the selected plus or minus ten percent thresholds would be done on a project-by-project basis. Mr. Duffer thanked Ms. McDonough for bringing this important matter to the attention of the Panel and noted that the Panel's subsequent recommendation would be incorporated in both the Panel's record and the Recommendation Report to the Director of FEMA.

- J. David Duffer: Based on the previous discussion, it should be made clear that for the purpose of the plus or minus ten percent threshold comparison to actual eligible cost, only the CEF estimate line item of the Project Worksheet (PW) could be compared to like costs derived from the total actual eligible cost. Often, the PW contains other line items of eligible work activity not normally contained within the CEF estimate, such as, salvage value, depreciation, insurance adjustments, anticipated insurance settlements, etc. Therefore, the threshold comparison to actual eligible costs must be made on the same line items of work defined in the CEF estimate, and not the total actual costs for the PW.

Answer: The Panel discussed and agreed with Mr. Duffer's observation and recommended that the proposed CEF data procurement process within the Public Assistance module of the National Emergency Management Information System be designed to consider direct tracking and resultant comparison of like work activities between the CEF estimate and actual eligible costs, and eliminate the potential for comparison of non-like work activity.

Closing Administrative Comments

In closing, Larry Zensinger noted that the Panel shall function on a continuing basis in accordance with the authorizing statute unless terminated by appropriate legislative authority. The Panel will meet not later than one year after the date of promulgation of regulations by FEMA, three years after that date and at the end of each two-year period. The purpose of these meetings is to examine the appropriateness of the adopted cost estimating procedure and to periodically submit a report to Congress on the Panel's findings.

Mr. Zensinger thanked all the Panelists and members of the general public for participating in the meeting and complimented the Panel for being a first-class, collegial group. Mr. Zensinger also noted that the Panel's objectives as depicted in the Federal Advisory Committee Charter had been successfully achieved.

The meeting adjourned at 4:00 PM.

I _____ (Laurence W. Zensinger, Designated Federal Official), this 30th day of November, 2001, hereby certify that the Summary Meeting Notes and attachments accurately describe the matters discussed and resolutions made during the second Federal Advisory Committee Meeting of the Expert Panel on Cost Estimating for the Public Assistance Program.