



October 21, 2016

Via Federal eRulemaking Portal

Regulatory Affairs Division
Office of Chief Counsel
Federal Emergency Management Agency
8NE-1604
500 C Street, S.W.
Washington, DC 20472-3100

Re: Comments on Updates to Floodplain Management and Protection of Wetlands Regulations to Implement Executive Order 13690 and the Federal Flood Risk Management Standard; FEMA Policy: Guidance for Implementing the Federal Flood Risk Management Standard, FEMA Policy 078-3; and Supporting and Related Documents. Docket Ids. FEMA 2015-0006-0373, FEMA 2015-0006-0374, FEMA 2015-0006-0378.

Dear Docket Clerk,

The American Petroleum Institute (API), the Independent Petroleum Association of America (IPAA), and the American Exploration and Production Council (AXPC), collectively “we” or “the Associations” are pleased to submit comments on the Federal Emergency Management Agency’s (FEMA) following documents available under Docket Id. FEMA 2015-0006:¹

- Proposed Rule on Updates to Floodplain Management and Protection of Wetlands Regulations to Implement Executive Order (EO) 13690² and the Federal Flood Risk Management Standard (FFRMS) (Proposed Rule), Aug. 22, 2016
- Guidance for Implementing the Federal Flood Risk Management Standard (FFRMS), FEMA Policy 078-3 (Supplementary Policy), Aug. 22, 2016
- Regulatory Evaluation, Aug. 22, 2016
- Draft Report – 2016 Evaluation of the Benefits of Freeboard for Public and Nonresidential Buildings in Coastal Areas (Draft Freeboard Report), Sept. 20, 2016

API is a national trade association representing over 600 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support

¹ 81 Fed. Reg. 57,402 (Aug. 22, 2016); 81 Fed. Reg. 56,558 (Aug. 22, 2016); and 81 Fed. Reg. 64,403 (Sept. 20, 2016).

² 80 Fed. Reg. 6,425, (Feb. 4, 2015) (EO 13690).

all segments of the industry. API members have a substantial interest in federal water and related land resources planning, regulating, and licensing activities which are in the scope of this Proposed Rule and Supplementary Policy as discussed below.

IPAA represents the thousands of independent oil and natural gas explorers and producers, as well as the service and supply industries that support their efforts, that will most directly be impacted by the federal regulatory policies. Independent producers develop about 95 percent of American oil and natural gas wells, produce 54 percent of American oil, and produce 85 percent of American natural gas. Historically, independent producers have invested over 150 percent of their cash flow back into American oil and natural gas development to find and produce more American energy. IPAA is dedicated to ensuring a strong, viable American oil and natural gas industry, recognizing that an adequate and secure supply of energy is essential to the national economy.

The American Exploration & Production Council ("AXPC") is a national trade association representing 32 of America's largest and most active independent natural gas and crude oil exploration and production companies. AXPC's members are "independent" in that their operations are limited to the exploration for and production of natural gas and crude oil. Moreover, its members operate autonomously, unlike their fully integrated counterparts, which operate in different segments of the energy industry, such as refining and marketing. AXPC's members are leaders in developing and applying the innovative and advanced technologies necessary to explore for and produce natural gas and crude oil that allows our nation to add reasonably priced domestic energy reserves in environmentally responsible ways.

The Associations and their members have been constructive participants in the regulatory process and in conjunction with the U.S. Oil and Gas Association, Independent Petroleum Association of America, and Associated General Contractors of America submitted comments on the Revised Guidelines for Implementing Executive Order 11988, Floodplain Management, Draft for Public Comment, as published on February 5, 2015.³

I. SUMMARY OF COMMENTS

The Associations share FEMA's goals for effective floodplain management but here, we are concerned that fundamentally, the true scope of the floodplain expansion contemplated under this Proposed Rule has been poorly delineated for stakeholders, and it has the potential to have far-reaching implications beyond FEMA federally funded projects. When left to the discretion of individual governmental agencies, there is a potential for an assortment of floodplain definitions as each of these jurisdictional entities attempt to apply the new risk-based approaches

³ 80 Fed. Reg. 6,530 (Feb, 5, 2015); API et al. comments by Amy Emmert submitted to Mitigation Framework Leadership Group (MitFLG), May 5, 2015. See www.regulations.gov, Docket Id. FEMA-2015-0006. In response to comments, the Final Revised Guidelines narrow the applicability of these requirements to federally funded projects which API appreciates; however, many of its concerns as outlined in its comment letter still remain and are incorporated by reference to this letter. See Guidelines for Implementing Executive Order 11988, Floodplain Management, and Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, Oct. 8, 2015 (Final Revised Guidelines).

(and by extension, to many state and local governments). This would likely lead to tremendous uncertainty, project delays, and increased costs to the regulated community, especially with projects that require multi-agency coordination, in terms of which floodplain approach and process would apply. The Regulatory Evaluation associated with the Proposed Rule uses data that is limited to coastal residential communities, greatly underestimates costs associated with this Proposed Rule and Supplementary Policy, and does not quantify benefits.

In recent years, there has been greater emphasis from the Executive Branch on increasing resilience against flooding for structures or facilities funded by taxpayer dollars which the Associations appreciate. However, current FEMA rules, policy and maps already consider varying meteorological, land development, erosion and other causes; and maps are constantly being updated to reflect current conditions and technological advances. The Associations welcome FEMA's careful assessment of the FFRMS approaches, including acknowledging formidable challenges associated with the Climate Informed Science Approach (CISA). The Associations also appreciate FEMA's tailoring of the four methods to the primary use of Freeboard Value Approach (FVA) in its Proposed Rule. Yet, applying the simplistic FVA across the nation without consideration to local conditions including variance in terrain, flow direction or drainage patterns, is imprudent. As such, we recommend that FEMA maintain the traditional framework.⁴

The Associations submit that because of the limiting language in EO 13690 which states "to the extent permitted by law," FEMA's seeming obligation to amend existing regulations under the order is not absolute.⁵ A rule adoption, for example, requires an agency to meet additional stricter legal requirements under statutes such as the Administrative Procedure Act (APA). Moreover, EO 11988 as amended does not create a mechanism for enforcing the terms of the order except that the Water Resources Council (WRC) is required to "periodically evaluate agency procedures and effectiveness."⁶ Also, the FFRMS does not have the force of law and neither do the Revised Guidelines which are simply "advisory."⁷

In the alternative, if FEMA proceeds with revising its rule under its current approach, FEMA and other implementing agencies, at a very minimum must comply fully with the APA, including providing a complete cost-benefit assessment of the FVA. In addition, if FEMA proceeds with FVA, it should narrowly apply the FVA only to specific federal projects fully funded by taxpayer dollars, and it should be made clear that where there is an overlap geographically or otherwise between the two frameworks, the traditional framework will prevail for all other federal and non-federal actions.

⁴ The traditional framework is what API refers to the current 44 CFR Part 9 requirements applying the 1-percent annual chance floodplain for non-critical federal actions and the 0.2-percent annual chance floodplain for critical actions.

⁵ EO 13690, Sec. 3(c).

⁶ 42 Fed. Reg. 26,951 (May 25, 1977) (EO 11988).

⁷ Final Revised Guidelines at p. 3.

Moreover, because of challenges with data and methodologies as highlighted by FEMA in the Proposed Rule and as discussed more fully below, the CISA must be tabled in its entirety at this time. Unsupported climate assumptions or speculation should not form the basis of an expanded floodplain definition. The Intergovernmental Panel on Climate Change (IPCC) finds that even with some improvements in regional scale climate information, there is substantial uncertainty in downscaling global projections of climate change effects postulated on the basis of complex global models (computer simulations) to regional scales or smaller.⁸ The IPCC also reports that in North America, “[f]ew discernible trends in flooding have been observed in the USA” and that “[c]hanges in the magnitude or frequency of flood events have not been attributed to climate change.”⁹ Citing to a number of studies, IPCC finds that, “[f]loods are generated by multiple mechanisms (e.g., land use, seasonal changes, and urbanization); trend detection is confounded by flow regulation, teleconnections, and long-term persistence.”¹⁰

While local models may be updated to reflect more recent historical rainfall patterns and new built environment, and thus provide improved near-term projections, it is unclear how this differs significantly from FEMA’s current practice of updates (with public participation) of Flood Insurance Rate Maps (FIRM), or indeed how this represents a CISA as opposed to standard engineering best practice. In addition, without a standardized methodology for making CISA decisions, there is a real risk that an agency could interpret a handful of data-points of sea-level trending over the past several years as enough to extrapolate to a significantly larger floodplain or an agency could apply unevenly project-specific factors called for in the Final Revised Guidelines causing delay and uncertainty. Given this uncertainty and the fact that FEMA already has a robust system in place to update its flood maps, the CISA must be removed from consideration at this time.

Lastly, any consideration to natural or nature-based approaches in the development of alternatives for any federal action in the floodplain should continue to be evaluated under FEMA’s existing practice; however, it should not be adopted as a rule requirement.

Further in-depth discussion of these comments is found below.

II. REGULATORY OVERVIEW

⁸ See IPCC, 2014: Climate Change 2014: Impacts, Adaptations, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Barros, Field, et. al (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 688, at pp. 1135-1138. The IPCC Report states, “Downscaling of global climate reconstructions and models has advanced to bring the climate data to a closer match for the temporal and spatial resolution requirements for assessing many regional impacts, and the application of downscaled climate data has expanded substantially since [IPCC’s Fourth Assessment Report]. This information remains weakly coordinated, and current results indicate that high-resolution downscaled reconstructions of the current climate can have significant errors. The increase in downscaled data sets has not narrowed the uncertainty range.” *Id.* at pp. 1137-1138. [Emphasis added.]

⁹ *Id.* at p. 1,456.

¹⁰ *Id.*

The definition of floodplain was first established in 1977 under EO 11988 as that “area subject to a one percent or greater chance of flooding in any given year.”¹¹ EO 11988 states that:

Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for:

(1) acquiring, managing, and disposing of [f]ederal lands, and facilities;

(2) providing [f]ederally undertaken, financed, or assisted construction and improvements; and

(3) conducting [f]ederal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.¹²

The following year, the requirements of EO 11988 were implemented through the WRC’s Flood Management Guidelines which established an 8-step process to carry out EO 11988’s direction to avoid the direct or indirect support of floodplain development whenever there is a practicable alternative.¹³ Subsequently, FEMA implemented its interim and final regulations creating a similar 8-step process as well as a definition of critical action.¹⁴ This process includes determining if a proposed action is in the floodplain and evaluating alternatives to constructing in floodplains, and has been in place until now. The first step involving the question of whether a proposed action is in a 1-percent annual chance floodplain (or 0.2-percent annual chance floodplain for critical actions) is determined using the following tools:

- **FIRMs** -- Official maps developed by FEMA showing elevations and boundaries of floodplains and is created for floodplain management and insurance purposes. Through its Risk Map Program, FEMA consistently releases updated maps in response to change in weather patterns, land development, erosion, and other activities.¹⁵ Flood Map Modernization (Map Mod), a multi-year Presidential initiative funded by Congress from 2003-2008, improved and updated the nation’s flood maps and provided 92 percent of

¹¹ EO 11988. Legal authority is cited as in furtherance of National Flood Insurance Act (NFIP) of 1968 (establishes a multi-purpose program to provide flood insurance and minimize damage by floodplains, and guide construction away from floodplains where practicable) and the National Environmental Policy Act (NEPA) (requires projects involving proposed federal agency action to consider environmental impacts and evaluate alternatives). Id.

¹² Id. This three-part provision defines “action” in 44 CFR Part 9.4.

¹³ 43 Fed. Reg. 6,030 (Feb. 10, 1978).

¹⁴ 44 Fed. Reg. 76,510 (Dec. 27, 1979); 45 Fed. Reg. 59,520 (Sept. 9, 1980).

¹⁵ See <https://www.fema.gov/risk-mapping-assessment-and-planning-risk-map>. [Last accessed Oct. 14, 2016].

the nation's population with digital Flood Insurance Rate Maps.¹⁶ Currently, as part of a multi-year study mapping coastal risks from flooding, using updated data and latest technology, coastal study update, more than 75% of coastal areas in the U.S. will be updated by 2018 according to FEMA.¹⁷

- **Flood Boundary Floodway Map** -- Flood map that only shows floodways and flood boundaries.
- **Flood Insurance Study** -- Examination, determination, and evaluation of flood hazards.
- **If maps/data are not available**, FEMA must seek detailed information from a list of sources under its regulations, and as last resort, seek services of an engineer.¹⁸

Federal agencies, communities participating in the NFIP program, regulated community, and the public have come to rely on these tools for flood management and insurance purposes; and government staff are also trained in applying this system to a wide array of action including licensing and permitting programs.

Now, stemming from recommendations of the Hurricane Sandy Rebuilding Task Force (Sandy Task Force), President's Climate Action Plan, and President's State, Local, and Tribal Leaders Task force on Climate Preparedness and Resilience, there is a fundamental change proposed in the designation of floodplains.¹⁹ The Sandy Task Force required all major rebuilding efforts in Sandy-affected communities to be elevated to 1-foot above baseline elevation.²⁰ The President's Climate Change Plan directs agencies to update their flood risk reduction standards for "federally-funded . . . projects" to ensure that "projects funded with taxpayer dollars last as long as intended."²¹ The President's State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience recommends federal agencies when taking actions in or around floodplains, to consider the effects of climate change and use best available climate data for siting and designing projects receiving federal funding and to include margins of safety, such as freeboard.²² With these recommendations came the creation of a multi-agency group called the MitFLG chaired by FEMA which drafted the first FFRMS.²³ This FFRMS was incorporated into a new EO 13690 as issued by President Obama in 2015.²⁴

The EO 13690 offers the following:

¹⁶ See <https://www.fema.gov/map-modernization - 2>. [Last accessed Oct. 14. 2016].

¹⁷ See https://www.floodsmart.gov/floodsmart/pages/coastal_flooding/coastal_flood_maps.jsp. The reason for the update is because "[f]lood risks change over time due to land development, erosion, increasing storm intensity, and other causes," and "mapping technologies have improved." *Id.* [Last accessed Oct. 14. 2016].

¹⁸ 44 CFR Part 9.7(c).

¹⁹ Proposed Rule at p. 57,406.

²⁰ *Id.*

²¹ *Id.*

²² *Id.*

²³ *Id.*

²⁴ *Id.* EO 13690.

- Amends EO 11988 and establishes the FFRMS.
- Establishes four approaches for designating a floodplain.
- Requires stakeholder input prior to implementing the FFRMS.
- Requires revising implementing guidelines established by WRC.
- “To the extent permitted by law,” directs agencies to issue/amend regulations and update procedures to comply with the order.²⁵

As a result, the MitFLG in coordination with WRC issued Final Revised Guidelines in 2016 and with that, the FFRMS was also revised to limit applicability of the FFRMS to federally funded projects only.²⁶ FEMA following an early notice and comment of intent to implement the FFRMS, now proposes revising its Proposed Rule under 44 CFR Part 9.²⁷ FEMA also proposes a Supplementary Policy for comment as well as the Draft Freeboard Report to supplement its Regulation Evaluation as published on September 20, 2016.²⁸ Comments are due on October 21, 2016.

III. A DISCUSSION OF EO 13690, FFRMS, FINAL REVISED GUIDELINES, PROPOSED RULE, SUPPLEMENTARY POLICY, AND SUPPORTING DOCUMENTS

The FFRMS is described as a “flexible framework to increase resilience against flooding and help preserve the natural values of floodplains.”²⁹ Further, EO 13690 states that “[i]ncorporating this Standard will ensure that agencies expand management from the current base flood level to a higher vertical elevation and corresponding horizontal floodplain to address current and future flood risk and ensure that projects funded with taxpayer dollars last as long as intended.”³⁰

The EO 13690, the Final Revised Guidelines, and Proposed Rule establish floodplains for federally funded projects by using any one of the four approaches:

- Climate Informed Science Approach (CISA) – the elevation and flood hazard area that result from using a climate-informed science approach that uses best-available, actionable hydrological and hydraulic data and methods that integrate current and future changes in flooding based on climate science.
- Freeboard Value Approach (FVA) – the elevation and flood hazard area that result from using the freeboard value reached by adding an additional 2 or 3 feet

²⁵ EO 13690. Thirty agencies were requested to submit implementation plans to the National Security Council with time frame and process. EO 11988 and EO 13690 Implementing Guidelines Comment Response Document, MitFLG, Oct. 30, 2015, at p. 6 (Comment Response Document).

²⁶ Proposed Rule at p. 57,407.

²⁷ *Id.* at p. 57,419. Overview of FEMA’s Intent to Implement the FFRMS, published on FEMA website, Dec. 17, 2015.

²⁸ Draft Freeboard Report.

²⁹ EO 13690.

³⁰ *Id.*

of vertical elevation (as well as corresponding increase in the horizontal extent of the floodplain).

- 500-year or 0.2-Percent Annual Chance Flood Approach – the area subject to flooding by the 0.2-percent annual chance flood and using it as a basis for the FFRMS elevation and corresponding horizontal extent.
- Elevation and flood hazard area that result from using any other method identified in an update to the FFRMS.³¹

The Final Revised Guidelines updated the FFRMS by limiting applicability of these approaches to federally funded projects.³² The Proposed Rule defines federally funded projects as “actions where FEMA funds are used for new construction, substantial improvement, or to address substantial damage to a structure or facility.”³³ An additional new step in the 8-step process applies to all actions. This is based on EO 13690 which states, “[w]here possible, an agency shall use natural systems, ecosystem processes, and nature-based approaches when developing alternatives for consideration.”³⁴ This would apply to actions such as licensing and permitting programs also.

The Proposed Rule and Supplementary Policy consider all four FFRMS approaches and FEMA chooses the FVA citing a practical need for standardization, availability of widely available maps/data, minimal staff training needed to determine horizontal extent, and that freeboard requirements have been adopted in 22 states and 596 localities.³⁵ The Proposed Rule rejects the CISA (except for certain critical actions) stating that actionable climate data is not available for all locations and that a lack of standardized methodology in applying the CISA would result in uncertainty/delay.³⁶ FEMA also rejects the 500-year floodplain approach citing limited availability of information for the 0.2-percent annual chance floodplain as well as additional costs associated with producing this information when not available.³⁷ FEMA also states it may also elect to use a method used by another agency on action requiring multi-agency projects.³⁸ The Proposed Rule applies to new actions commenced on or after the effective date of rule.³⁹ The Proposed Rule provides new definitions including a definition for nature-based approaches and states that it is codifying its existing practice for nature-based approaches into rule.⁴⁰

³¹ Proposed Rule at p. 57,433.

³² Final Revised Guidelines at p. 4.

³³ Proposed Rule at p. 57,433.

³⁴ EO 13690. This language is added in the Supplementary Policy, Figure 2, Eight-step Decision-making Process for EO 11988, as amended by EO 13690. [Emphasis added.]

³⁵ Proposed Rule at pp. 57,411-57,412.

³⁶ Id.

³⁷ Id. at p. 57,412.

³⁸ Supplementary Policy at p. 5.

³⁹ Proposed Rule at p. 57,433.

⁴⁰ Regulatory Evaluation at p. 36.

EO 13690 as reflected in accompanying documents clarifies that the FFRMS will not apply to emergency work essential to save lives and protect property and public health and safety or if it is in the interest of national security.⁴¹ MitFLG also states that the new FFRMS approaches will not affect insurance premiums or minimum floodplain requirements that communities must adopt in order to participate in NFIP nor will it affect the Waters of the US Rule.⁴² Individual agencies have also issued their own policies. The U.S. Department of Housing and Urban Development will not apply the FFRMS approaches to single-family home mortgages for acquisition or refinancing of existing homes under the Federal Housing Administration or any other program.⁴³ The U.S. Army Corps of Engineers (Corps) has also stated that its policy is to continue to review Section 404 applications by applying the area subject to the base flood elevation under the traditional framework.⁴⁴ However, the traditional framework appears to be a minimum requirement. Agencies are not precluded from adopting the FFRMS methods for other areas. Agencies would need to simply provide an explanation in their agency-specific procedures if they apply a FFRMS approach to other types of federal action such as permits.⁴⁵

Lastly, unlike the traditional framework where the public has come to expect credible maps for most of the nation, MitFLG has also stated that agencies will not necessarily map all new floodplains determined under the new approaches nor will the new boundaries appear in FIRMs and that such maps if included would only need to extend to the area relevant to the action.⁴⁶

IV. GENERAL COMMENTS

A. The Proposed Rule has potentially far-reaching regulatory and economic implications beyond FEMA-funded programs that are little understood or defined (e.g. reach of the FFRMS approaches into other areas).

While this particular Proposed Rule applies to FEMA federally funded projects, there is a potential for a plethora of “choose-your-own” floodplain definitions left to the discretion of individual governmental agencies as each of these jurisdictional entities attempt to apply the new risk-based approaches (and by extension, to many state and local governments). Certain programs such as those under the NEPA require multi-agency coordination and there is

⁴¹ EO 13690.

⁴² Comment Response Document at pp. 5-6.

⁴³ *Id.* at p. 4; HUD’s Implementation of EO 13690 and the Federal Flood Risk Management Standard, available at https://portal.hud.gov/hudportal/HUD?src=/press/speeches_remarks_statements/2015/Statement_071715. [Last accessed Oct. 14. 2016].

⁴⁴ *Id.* at pp. 5-6; Applicability of Floodplain Management and FFRMS Executive Orders to USACE Permitting Authorities, U.S. Army Corps of Engineers, available at <http://www.usace.army.mil/Media/Fact-Sheets/Fact-Sheet-Article-View/Article/613901/applicability-of-floodplain-management-and-ffrms-executive-orders-to-usace-perm/>. [Last accessed Oct. 10. 2016].

⁴⁵ Comment Response Document at p. 4.

⁴⁶ *Id.* at p. 3.

uncertainty in terms of which floodplain approach and process would apply.⁴⁷ The sheer breadth of the ripple effect caused by the FFRMS and the Proposed Rule counsels strongly in favor of maintaining the traditional framework until the proposed approaches have been fully vetted and subject to rigorous cost-benefit analysis.

B. At a fundamental level, EO 13690, FFRMS, the Final Revised Guidelines and now the implementing Proposed Rule change the overall perception of floodplain to risk-based ever-evolving designations instead of firm standards based on expected frequency.

With a new FFRMS model, there is a structural shift in the floodplain paradigm that has been carefully developed by FEMA and has become an integral part of the common parlance. This change undermines FEMA's well-established and robust existing mapping tools as discussed above. Arguing that this Proposed Rule merely has a narrow scope affecting only federally funded projects is misleading. Clearly, there is already consideration to broaden the scope of the FFRMS floodplains to other areas, including licensing and permitting.⁴⁸ Moreover, a bifurcated system of designating floodplains -- one for federally funded projects and another for all other federal action -- is likely to lead to confusion in the eyes of its users as well as uncertainty leading to significant effect on project compliance, engineering design, construction and operation costs. Adding unwarranted ambiguity to the existing floodplain framework could also expose FEMA and other agencies to more judicial challenges to proposed federal actions similar to challenges to NEPA analyses which are at times arbitrarily used as a tool to delay and stop certain projects.

C. As the first agency to implement the FFRMS and the Final Revised Guidelines, FEMA's Proposed Rule will influence other agencies' implementing rules.

With thirty agencies having been requested to submit Implementation Plans describing their timeframe and process for updating their implementing procedures to the National Security Council⁴⁹ and FEMA's core role in setting flood management policies for the nation, FEMA needs to exercise additional care and caution in considering the implications of the Proposed Rule and Supplementary Policy. Notwithstanding the above, this would also include the trickle-down effect to state and local governments.

D. The four proposed methods for determining floodplains will lead to uncertainty and confusion in applying the standards uniformly, increased compliance costs, and project delays.

⁴⁷ As discussed above, the Corps has issued guidance limiting floodplain definition to a 100-year floodplain for Section 404 permitting under the Clean Water Act and Section 10 of the Rivers and Harbors Act but it is simply a guidance. It is not also clear how the federally funded requirement will apply to non-federal sponsors under the Corps' Section 408 program.

⁴⁸ The language in the Final Revised Guidelines already provides that agencies "may" use higher standards. Comment Response Document at p. 10.

⁴⁹ *Id.* at p. 6.

FEMA attempts to consider the four approaches with a frank evaluation of data challenges associated with the methods and shifting away from the CISA as the preferred approach. However, with ambiguous Final Revised Guidelines and the FFRMS on which this Proposed Rule is based, there are fundamental issues with each of the following four methods:

a. *CISA*. There is a lack of consistent data and modeling uncertainty resulting in an ever-changing regulatory foot-print. As discussed in the Proposed Rule and in the Regulatory Evaluation, there is a lack of availability of actionable climate data for all locations, especially for inland riverine floodplains, and it would be difficult to implement a CISA using standardized, predictable, flexible, and cost-effective methodology.⁵⁰ The Associations submit that these same issues apply to critical actions; and yet, FEMA is recommending the CISA as a preferred option for critical actions.⁵¹ The use of the CISA should not be permitted for critical actions either (see discussion in detail below).

b. *FVA*. This approach will result in a vertical elevation as well as a corresponding horizontal expansion of the floodplain. As discussed below, the scope of the expansion is not known to FEMA because of limitations with data collection, uncertainty of modeling and so forth. With elevation requirements for the construction of certain federally funded structures and facilities, FEMA also raises concern with compliance with the American Disabilities Act and other similar statutes which could increase costs dramatically.⁵²

c. *The 0.2-percent annual chance flood chance (known as 500-year flood elevation)*. As discussed in the Proposed Rule, this approach is also problematic because only 18 percent of mapped flood zones have detailed floodplain boundaries of the 0.2-percent annual chance floodplain.⁵³

d. *The elevated and flood hazard area that results from using any other method identified in an update to the FFRMS*. The FFRMS is to be reviewed every year and revised at least once every 5 years. The FFRMS are not subject to APA notice and comments requirements and given their crucial role in defining a floodplain method, any standard that is revised under the FFRMS needs to be subject to notice and comment under the APA. “Any other method” identified in an update to the FFRMS is too open-ended to be included in a proposed rule. This method should be removed from the Proposed Rule and if there are revisions contemplated in the future, there should be future rulemaking to address additional changes.

⁵⁰ Proposed Rule at pp. 57,411-57,412.

⁵¹ Supplementary Policy at 1. Note that the Proposed Rule states the CISA is to be used for critical actions “but only if the elevation established under the CISA is higher than the elevation established under the FFRMS-FVA.” Proposed Rule at p. 57,412.

⁵² Proposed Rule at p. 57,412.

⁵³ *Id.* at p. 57,404, Footnote 10.

E. The true scope of the floodplain expansion contemplated under the FFRMS and the Proposed Rule has been poorly delineated for the stakeholders.

FEMA acknowledges that “[b]ecause of the varied topography and hydrography of the United States, it is very difficult to provide an estimate of how much the floodplain would expand as a result of adding freeboard values nationwide.”⁵⁴ This is a serious shortcoming of the Proposed Rule since it chose the FVA as the preferred method. Floodplain expansion nationwide needs to be adequately represented in the Proposed Rule and then taken into account for added costs and regulatory burdens. Using 24 counties in only Washington, Georgia, California, North Carolina, and South Carolina for its estimates for costs associated with the FVA is not representative of varied topography found in the US.⁵⁵ Places that are relatively flat in topography (e.g. coastal Houston-Galveston metropolitan area) can expect a 2-foot vertical expansion to translate to a significant increase in horizontal expansion of the floodplain.⁵⁶

F. FEMA’s decision to apply the simplistic FVA across the board is imprudent at this time; and the traditional framework must remain in place.

While FEMA rejects the CISA in most part and chooses the FVA, this approach is also flawed for a number of reasons. For starters and as discussed below, estimated costs are based on data of limited applicability, the scope of floodplain expansion under this method is unknown, and no quantifiable benefits are provided in the Regulatory Evaluation. In addition, a 2-foot or 3-foot increase in freeboard does not consider local conditions including varying terrain, flow direction or drainage patterns.

FEMA also mistakenly believes that there will be minimal effort to determine the horizontal extent of a floodplain because of widely available data and that freeboard requirements have already been adopted in many states and localities. However, establishing ground elevation is not as simple as consulting FEMA maps for baseline elevation. FEMA states it may use available topographic information from the USGS and also rely on information submitted by an applicant on part of their project application.⁵⁷ This again puts additional burdens on applicants that are not accounted for.

In addition, the states and local entities that have adopted increased freeboard requirements still continue to confine those requirements within 100-year floodplain boundaries. Yet, depending on the area of the country, the FVA contemplates an expanded flood zone beyond the existing 100-year floodplain definition. This is an entirely new and uncharted dimension for agency staff as well as applicants and the public, and costs associated with increased staffing needs and potential delays have not been fully vetted.

⁵⁴ Regulatory Evaluation at p. 38.

⁵⁵ *Id.* at pp. 38-40.

⁵⁶ *See also* at p. 38.

⁵⁷ *Id.* at p. 57,414.

G. No comprehensive cost-benefit analyses of EO 13680 and the FFRMS have been released that evaluate anticipated effects on flood resilience and floodplains and the distribution across stakeholders of costs and benefits in the near-term and long-term.

In its Proposed Rule, FEMA struggles with providing a reasonable cost-benefit analysis and includes, by its own admission, a Regulatory Evaluation that uses data with limited scope.⁵⁸ FEMA estimates that for the 10-year period after the rule goes into effect the benefits would justify the costs.⁵⁹ Yet, the benefits are based on qualitative assumptions and no monetized benefits are provided.⁶⁰

Specific issues related to the Regulatory Evaluation, include but are not limited to the following:

- a. The Regulatory Evaluation relies on a 2008 FEMA report that analyzes potential savings from damage avoidance associated with freeboard that is limited to new residential structures in coastal areas.⁶¹ Recognizing these types of deficiencies, FEMA belatedly requests information from the public on benefits of freeboard for structures such as retrofitting substantial improvements projects, projects in non-coastal floodplains, and non-residential structures.⁶² FEMA provides a non-peer-reviewed Draft Freeboard Report published a month after the Proposed Rule soliciting comments on whether to use this Draft Freeboard Report to estimate costs and benefits for the final rule.⁶³ There is limited time for proper review. Regardless, the Draft Freeboard Report is limited to Zone A coastal communities and offers no data for cost-benefits impacts in inland riverine communities. While certain public buildings are considered, cost-benefits of increased freeboard requirements for structures such as bridges and roads are not included.
- b. Given the wide-ranging comments FEMA is requesting from the public on economic impacts, FEMA is putting the cart before the horse by attempting to fit a pre-set approach that has not been appropriately vetted into its implementing rule with justifications that are clearly deficient. Requesting comments from the public appears to be an attempt to shore up the rules. This does not provide confidence to the public in the Proposed Rule nor does it give adequate opportunity for the public to review and comment on these complex issues.
- c. The 8-step process that currently applies to the 1-percent annual chance floodplain (or 0.2-percent annual chance floodplain for critical action) will likely

⁵⁸ 81 Fed. Reg. at p. 64,404.

⁵⁹ Regulatory Evaluation at p. 2.

⁶⁰ *Id.* at pp. 82-88.

⁶¹ *Id.* at p. 42.

⁶² *Id.* at p. 86.

⁶³ 81 *Fed. Reg.* 64,403 (Sept. 20, 2016); Draft Freeboard Report.

become considerably more complicated with consideration of the proposed FFRMS FVA and CISA for federally funded projects as well as additional consideration to natural and nature-based approaches for all federal actions. Yet, FEMA simply states that “FEMA is unable to quantify the costs of applying the 8-step process to projects in the expanded floodplain or any results from that application” and that “these costs are widely variable.”⁶⁴ This is problematic. Given that the provision related to natural and nature-based approaches applies to all federal action projects including permitting and licensing programs, this additional strain on agency resources and applicants is not adequately considered.

d. As stated in the Regulatory Evaluation, relating to impacts, the Proposed Rule allows FEMA the option of using the CISA for certain critical actions but states that the “impact [is] not currently quantifiable.”⁶⁵ In fact, the Regulatory Evaluation provides that, “for the time period covered by this analysis, FEMA assumes all projects would use the FVA” and that “FEMA has therefore included no costs associated with the CISA in this analysis.”⁶⁶ FEMA states that “limited actionable data exists for this approach making it difficult to estimate the cost for CISA until it becomes technologically feasible.”⁶⁷ It is unacceptable to use an approach where the impacts are unknown.

e. The Regulatory Evaluation states that, “FEMA is unable to quantify the costs associated with nature-based approaches”⁶⁸ Again, it is unacceptable to use an approach where the impacts are unknown.

f. The option of using the FVA has estimated annualized cost between \$1.2 million and \$10.4 million and again, the basis of the estimates is based on data with limited scope.⁶⁹ These costs appear to be vastly underestimated for reasons too many to fully enumerate. Chiefly, the Regulatory Evaluation states that the “primary costs associated with this rule would be due to the expansion of the floodplain using the FVA and the corresponding elevation and floodproofing requirements,”⁷⁰ and yet, the extent of the expansion is unknown.⁷¹ Costs apply to projects funded through FEMA’s grant programs; as FEMA states, program data are the best available data for this purpose,” but “there are limitations.”⁷² For example, FEMA was not able to

⁶⁴ Regulatory Evaluation at pp. 79-80.

⁶⁵ Id. at p. 22 (Table 5 – Summary of Proposed Changes).

⁶⁶ Id. at p. 36.

⁶⁷ Id.

⁶⁸ Regulatory Evaluation at p. 35-36.

⁶⁹ Id. at pp. 22.

⁷⁰ Id. at p 31.

⁷¹ Id. at p. 40 (A small sample of 24 counties in California, Florida, Georgia, North Carolina, South Carolina, and Washington is used to determine the estimated expansion of the floodplain due to the FVA). Id. at p. 45.

⁷² Id. at p. 37.

determine the location of Individual Assistance projects in the floodplain because this data is not available in their databases.⁷³ In addition, the costs of implementing the FVA to non-coastal areas are not considered since the NFIP report data that is the basis for the cost of the proposed elevation requirement applies only to residential structures in coastal zones.⁷⁴ FEMA also has not been able to estimate costs of the Proposed Rule for road projects and that could be significant given higher elevation requirements under FVA.⁷⁵

g. The Regulatory Evaluation states that “[s]everal [s]tate and local governments have existing freeboard requirements” and that those “existing requirements have been taken into consideration when calculating the costs of implementing this proposed rule.”⁷⁶ Yet, FEMA also states that only 3 states have freeboard requirements of 2 feet or more and 232 out of 596 localities have freeboard requirements of at least 2 feet for non-critical facilities.⁷⁷ These freeboard requirements are also confined to the traditional floodplain definitions. FEMA is contemplating an expansion of the floodplain and those additional associated costs also need to be considered. Also, the trickle-down effect of these stricter regulations on states and local governments and their impact on regulated entities has not been fully considered.

h. Overall, many of FEMA assumptions relating to cost analysis are based on limited data, are flawed and underestimate costs of the Proposed Rule vastly.

H. More information is needed to explain what natural and nature-base approaches are, benefits they provide, process by which they will be considered and applied, the interplay of this approach with existing structural approaches for flood risk management, and application to permitting programs.

A new requirement as amended in EO 11988 is that agencies, “where possible,” shall use nature systems, ecosystem processes, and nature-based approaches are to be used when developing alternatives for a federal action in the floodplain. This non-compulsory language, applying to all federal action including federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating and licensing activities, is mirrored in the Proposed Rule without any further clarity by FEMA. The Regulatory Evaluation explains that these costs are not quantified either because currently as part of FEMA practice there is no one set standard that qualifies as a nature-based approach. Yet, FEMA provides for a specific definition adding a new regulatory burden for applicants in its 8-step process, and removes flexibility for applicants by making this a proposed requirement. Given these

⁷³ Id.

⁷⁴ Id. at p. 42.

⁷⁵ Id. at pp. 60-61. [Emphasis added].

⁷⁶ Id. at pp. 41-42.

⁷⁷ Id. at pp. 33-34.

deficiencies, the Associations recommend removing this as rule requirement and retaining existing FEMA policy to assess natural and nature-based approaches on a case-by-case basis.

I. FEMA’s Proposed Rule is not required to follow EO 11988 and EO 13690 and the FFRMS unequivocally but must follow the APA and other applicable requirements.

It is important to understand that EO 13690 only requires “[t]o the extent permitted by law,” each agency shall . . . issue or amend existing regulations and procedures to comply with this order, and update those regulations and procedures as warranted.”⁷⁸ Unlike the FFRMS and Final Revised Guidelines which were simply issued by MitFLG, FEMA’s rule revisions to its 44 CFR Part 9 are tied to stringent legal obligations that FEMA is required to meet under the APA and other applicable laws.⁷⁹ In addition, it should be noted that EO 11988 as amended does not create a mechanism for enforcing the terms of the order except that the Water Resources Council is required to “periodically evaluate agency procedures and their effectiveness” which FEMA can demonstrate through its robust flood management program.⁸⁰ Moreover, the flexible FFRMS does not have the force of law and neither do the Final Revised Guidelines which are simply advisory.⁸¹ In essence, FEMA is not required to follow EO 11988, EO 13690 and FFRMS requirements blindly, but it is legally required to follow the APA and other applicable requirements.

V. OVERALL RECOMMENDATION

- A. Based on all the issues raised above, the Associations recommend that FEMA maintain the traditional framework until it has fully evaluated all of the approaches being considered.**
- B. Any consideration to natural or nature-based approaches in the development of alternatives for any federal action in the floodplain should continue to be considered under FEMA’s existing practices, but not adopted as a rule requirement.**

VI. COMMENTS RELATING TO THE PROPOSED RULE

- A. Notwithstanding the above issues and recommendations, if FEMA decides to proceed with this Proposed Rule with FVA as its preferred FFRMS, FEMA needs to fully delineate the extent of the floodplain under FVA and adequately meet APA requirements. FEMA should also narrowly tailor FVA to specific federal projects directly funded by taxpayer dollars only; for all other action where there is an**

⁷⁸ EO 13690, Sec. 3(c). [Emphasis added.]

⁷⁹ Under the APA, federal courts have an obligation to set aside an agency action that is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law.” 5 U.S.C. Sec. 706(2)(A). Examples of arbitrary and capricious actions could include an unreasonable rule based on flawed cost-benefit analysis.

⁸⁰ EO 11988, Sec. 5.

⁸¹ Revised Final Guidelines at p. 3.

overlap geographically between the two frameworks, the traditional framework should prevail.

Prior to implementing the FVA as a rule, FEMA needs to fully delineate the extent of the floodplain expansion resulting from using this approach and justify the rule based on science and APA with costs and benefits fully evaluated. Assuming that these minimum standards are met and FEMA decides to proceed with FVA, the Associations offer the following comments on the Proposed Rule.

Overall, FEMA should be clear that where there is an overlap geographically between the two frameworks, the traditional framework should prevail for all other federal and non-federal actions. The Comment Response Document states that for all other federal actions, agencies are still required at a minimum to use the base flood elevation and floodplain and that “[a]gencies would need to explain in agency-specific-procedures whether and how the higher standard of the FFRMS would apply to other types of [f]ederal actions.”⁸² The Associations recommend that FEMA and other implementing agencies clearly provide in their rules that the FFRMS will only apply to the federally funded projects and the higher standard of the FFRMS will not apply to any other federal and non-federal actions. Moreover, because of challenges with data and methodologies as raised by FEMA and others, the CISA should be completely removed from consideration even as an option for critical action.

B. Specific Comments on the Proposed Rule are as follows:

a. Policy, 44 CFR Part 9.1. FEMA proposes to add language from EO 13690 that the United States must improve resilience of communities and federal assets against the impacts of flooding based on the best-available and actionable science. The Proposed Rule explains that this reflects an updated federal policy that takes the effects of climate change and other threats into account.⁸³ The Associations share the goal of reducing the risk of flood loss and improving resilience of communities; however, given FEMA’s own assessment of limitations with use of the CISA at the current time, we recommend against this proposed language.

b. Definitions, 44 CFR Part 9.4.

- i. 1-Percent Annual Chance Floodplain or Base Floodplain – This is a new definition that removes the reference to 100-year floodplain with an interchangeable definition that is “the area subject to flooding by the 1-percent annual chance or base flood.” However, to avoid any ambiguity relating to the applicability of a 100-year floodplain that is specifically referenced in the Waters of the U.S. rule⁸⁴ and given the introduction of

⁸² Comment Response Document at p. 4.

⁸³ Proposed Rule at p. 57,414.

⁸⁴ 80 Fed. Reg. 37,054, 37,081 (June 29, 2015) (The preamble to the Waters of the US Rule states: “In this rule, the agencies interpret ‘100-year floodplain’ to mean ‘the area that will be inundated by the flood event having a one

the FFRMS approaches, the Associations recommend clarifying in the preamble that agencies must interpret any rule references to the “100-year floodplain” to only mean “1 Percent Annual Chance Floodplain or Base Floodplain.” Mirroring the MitFLG Comment Response Document, the preamble to the Proposed Rule should also be revised to include language that the FFRMS do not apply to the Waters of the U.S. rule.

- ii. Critical Action – This definition for the most part in the FEMA Proposed Rule is the same except a deleted sentence that states, “[t]he minimum floodplain of concern for critical actions is the 500-year floodplain, i.e., critical action floodplain.”⁸⁵ The FFRMS states that federal departments and agencies will be responsible for determining whether a federal action constitutes a critical action; and yet, the definition does not reference the applicable floodplain approach as is provided in the current rule. The Proposed Rule should clarify the floodplain approach that will apply to critical actions. That is, the 500-year floodplain should be kept as a status quo under the traditional framework.
- iii. Federal Flood Risk Management Standard (FFRMS) – A definition is added that the FFRMS is a standard established by EO 13690 to be incorporated into existing processes used to implement EO 11988.⁸⁶ FEMA explains that it proposes to add a definition because this Proposed Rule proposes to implement the FFRMS.⁸⁷ However, the FFRMS is not a rule subject to notice and comment. The FFRMS is expected to be reviewed annually and revised at least once every 5 years outside of the APA notice and comment requirements.⁸⁸ The FFRMS is provided as a “flexible framework.”⁸⁹ Incorporating the FFRMS by reference into the Proposed Rule, an ever evolving document subject to review and updates, without any further opportunity for notice and comment, would be in violation of the APA. As such, the FFRMS should not be incorporated into the Proposed Rule.
- iv. FFRMS Floodplain – FEMA proposes to add a fourth approach: the elevation and flood hazard area that result from using any other method identified in an update to the FFRMS.⁹⁰ Any updates to the FEMA rules

percent chance of being equaled or exceeded in any given year.’ This is consistent with the Federal Emergency Management Agency’s (FEMA) definition of ‘100- year flood.’” Id.

⁸⁵ 44 CFR Part 9.4.

⁸⁶ Proposed Rule at p. 57,415.

⁸⁷ Id.

⁸⁸ Id. at p. 57,411.

⁸⁹ Id. at p. 57,407; EO 13690.

⁹⁰ Proposed Rule at p. 57,415. .

as a result to updates to the FFRMS will need to be subject to notice and comment under the APA.

- v. Floodplain – This definition as proposed expands the consideration of a floodplain from the 1-percent annual chance floodplain and includes the “FFRMS floodplain.” This latter definition needs to be qualified as applying to federally funded projects only. Also, the reference to the FFRMS should be removed to avoid confusion when the FFRMS is separately revised. The definition should specifically refer to the applicable approaches (i.e. FVA floodplain if FEMA proceeds with the FVA.)
- vi. Nature-based approach – This is defined as a subset of the new rule requirement for FEMA to use, where possible, natural systems, ecosystem processes, and nature-based approach, as alternatives, when considering development in a floodplain for any federal action.⁹¹ As discussed above, the current FEMA practice allows for flexibility to applicants in considering alternatives on a case-by-case basis and this flexibility should remain in place without any additional rule revisions to 44 CFR Part 9. The Associations recommend this definition not be included in the rule.

c. Scope, 44 CFR Part 9.5. The Associations appreciate applying the Proposed Rule prospectively to any new action that are commenced on or after the effective date of the final rule. However, actions include a variety of activities (with exceptions provided in this section) whereas the new FVA is applicable only to FEMA federally funded projects. That distinction needs to be clarified here if FEMA proceeds with using the FVA.

VI. SPECIFIC COMMENTS ON FEMA SUPPLEMENTARY POLICY

A. Given data challenges and uncertainties, the CISA should not be applied to any scenario.

The Supplementary Policy selects the use of the FVA to establish the elevation and the FFRMS floodplain for FEMA federally funded projects that are non-critical actions (building 2 feet above base elevation). For critical actions, the policy selects using 3 feet above base elevation and “encourages” the use of the CISA where actionable science is available and to establish elevation and floodplain for critical actions but only if the elevation established under the CISA is higher than the FVA.⁹² Far from being optional, this in essence would require all critical actions to be evaluated under both approaches to make the elevation determination. There would be greater opportunity for inconsistencies in which floodplain determination will apply especially where multiple agencies are involved. The policy encourages early coordination, however, that does not go far enough.

⁹¹ *Id.* at p. 57,416.

⁹² Supplementary Policy at p. 2.

It is the Associations' position that given the uncertainties with the CISA as outlined in the Proposed Rule, it is premature to use this approach. The FFRMS and the Final Revised Guidelines are not rules and agencies have discretion in their application. The Supplementary Policy including Figure 1 should be revised to remove consideration of the CISA.

There is also conflicting language in this document. The Supplementary Policy states the applicant "may elect" to use the CISA if the elevation reached using the CISA is higher than the FVA but then the Supplementary Policy also states that FEMA "encourages" the use of the CISA where "actionable science is available" and its principles states that the CISA is a "preferred option" under certain circumstance.⁹³ These sentences are conflicting and create ambiguity. FEMA's documents should be consistent, and if FEMA proceeds with this approach, it should be clear that the CISA is optional and left to the discretion of the applicant; however, as discussed above, the Associations recommend not including this as one of the approaches.

FEMA also states that it will "evaluate" whether the CISA methodology is appropriate for the action being considered and meeting the criteria of actionable science.⁹⁴ It is not clear what factors/criteria FEMA will take into consideration for this evaluation. Applicants need certainty and consistency in application of these requirements and yet none is provided.

B. There is a potential for inconsistent application of the FFRMS with projects involving multiple agencies.

The Supplementary Policy discusses coordination with other federal agencies but there is no process provided for situations where there is a conflict or disagreement in the selection of a approaches (except for a declared major disaster). Moreover, FEMA states that it "may elect" to use an approach selected by another agency.⁹⁵ The Associations recommend that FEMA maintain the existing traditional framework, and if FEMA proceeds with the FVA, FEMA and other agencies should use the FVA for the limited federal projects that this rule would apply to and remove the CISA entirely from consideration.

VII. SUMMARY

Protecting our nation's critical facilities and improving resilience of communities against catastrophic flood events is a priority that the Associations share with FEMA. The Associations appreciate the efforts FEMA undertakes to identify flood hazards, assess flood risks, coordinate with stakeholders, and continuously provide updated flood maps to reflect the latest weather patterns, land development, and erosions conditions. These measures provide effective basis for flood management resulting in more resilient communities.

As such, this is not the time for an overhaul of its existing robust traditional framework that is constantly being augmented with new technologies and data. The Associations are concerned

⁹³ Id.

⁹⁴ Id.

⁹⁵ Id. at p. 5.

that the scope of floodplain expansion under the Proposed Rule is poorly delineated for stakeholders, that there are significant flaws with each of the FFRMS approaches including the FVA, that costs have been vastly underestimated, and that benefits remain unquantified.

The Associations urge that FEMA give appropriate weight to the APA, and for reasons discussed above, refrain from revising 44 CFR Part 9 to include any of the FFRM approaches. We also recommend that FEMA continue to implement nature-based approaches under its existing FEMA practice to allow flexibility instead of making it a requirement in the rule.

Thank you for your consideration of these comments. We look forward to working with you on this important issue.

Sincerely,



Amy Emmert
Senior Policy Advisor
American Petroleum Institute
1220 L Street NW
Washington, DC 20008
Tel: (202) 682-8372
Email: emmerta@api.org



Lee Fuller
Executive Vice President
Independent Petroleum Association of America
1201 15th Street NW Suite 300
Washington, DC 20005
Tel: (202) 857-4722
Email: lfuller@ipaa.org



V. Bruce Thompson
President
American Exploration & Production Council
101 Constitution Avenue, NW Suite 700E
Washington, DC 20001
Tel: 202-742-4541 (direct)
Email: bthompson@axpc.us

cc:

E. Milito, API

S. Meadows, API

P. Tolsdorf, API

K. Cauthen, API

H. Moffett, API