THE PRACTITIONER

Behind the Review Curtain
A Look at One Observer's Insight of PM-30's 'Implementation Review'

Recently, one of our industry's and EFCOG's best had the opportunity to observe a PM-30 Implementation Review up close. Richard Millikin, Vice President and Senior Program Manager, Nuclear Projects and Consulting, was invited to a "ride-along" with PM-30 while they conducted an implementation review. Rick's enlightening and very useful observations are provided below. We thank Rick for sharing his insight and encourage others to consider doing the same. If you have an experience you would like to share from your engagement with a PPR, IPR, EIR, IBR, or other review types that could benefit your Project Deliver Working Group team members, reach-out with a writeup like Rick's below and we will share through the *Practitioner*.

Colleagues,

I had the honor and pleasure to be a part of a PM-30 Implementation Review for a Certified Earned Value Management System. This review took place using three months-worth of project data that was submitted by the prime contractor to the PARS system maintained by PM-30. PM-30 Leadership has recruited and encouraged Industry and EFCOG partners to join their review teams to learn the Certification processes and take those back as lessons learned for the community. This also affords an opportunity to learn some best practices at the site being reviewed to share them with other sites. In addition, PM-30 values (and I quote):

> *"…I (M Frank) value the feedback EFCOG/industry can provide in team discussions relative to the practical vice theoretical aspects of actually implementing a system in the field on projects and some of the tradeoffs that have to be considered which can help temper and mitigate how we end up addressing a potential CAR/DR… they (previous participants) helped us greatly in these discussions so we could be more objective and fair in the assessment."*

The Implementation Review that was conducted is a special type of surveillance performed in lieu of a Certification Review where PM-30 extends the certification of a contractor's previously certified system. This review included an evaluation of the Culture, through an Environmental Survey, and compliance through assessing specific criteria referred to as "Maturity Attributes".

I provide the following thoughts and observations for your consideration regardless of whether you are on track for any type of EVMS compliance review (Certification, Implementation, Surveillance):

EVMS Implementation Review

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Preparation for the Assessment is Critical

- Knowledge of compliance criteria and attributes
  - Your Project Control Administrative team needs to have experts with practical experience in certified systems; there is no substitute for experience
  - The PM-30 team is very confident that their process implements the requirements of DOE 413 and EIA-748 without deviation
  - Your Project Control Administrative team needs to be fully aware of the PM-30 process to assess compliance with EIA-748 (click on the links below to view the guiding documents)
    - Office of Project Management (PM) Earned Value Management Systems Compliance Review Standard Operating Procedure (ECRSOP), DOE-PM-SOP-04-2022, July 5, 2022
    - Office of Project Management (PM) Earned Value Management Systems Compliance Review Standard Operating Procedure (ECRSOP), APPENDIX A; Compliance Assessment Governance (CAG) 2.0, July 1, 2022
    - Implementing the Integrated Project/Program Management (IP2M) Maturity and Environment Total Risk Rating (METRR) Using EVMS in a Team Environment (Report No. 6); July 19, 2022
  - Be prepared to demonstrate compliance, and that your management team is using the earned value system and data to make informed decisions

Conduct Honest/Transparent Self Assessments and/or Self-Governess prior to PM-30 Review

- PM-30 primary pursuit is to ensure compliance through self-governance, therefore this area, when done well, will be viewed very positively by the certification team and will result in less team generated Corrective Action Requests (CARs) and streamline the path to Certification.
- PM-30 provides for Contractor Use:
- EVMS Compliance Reference Crosswalk (CRC) Excel file for use in documenting the assessment of a contractor's EVM system description and supporting procedures
- EVMS Testing Specification Sheets for use in identifying and documenting the results of the automated and manual tests required for each attribute.
- Run testing and metrics against PARs File data
- In your Self-Assessment, document results of Management Reviews, CAM Interviews, and data reviews including development of issues/non-compliances and required Corrective Actions; Develop a Corrective Action Management Plan including causal analysis, corrective actions, exit criteria and schedule for closure.

Provide quality uploads to PARs

- Poor quality data frustrates the PM-30 technicians and results in re-work on both ends

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EVMS Implementation Review

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- Poor quality data will result in testing failures and CARs that otherwise could have been avoided.
- PM-30 will work with your team to ensure proper formatting and data sourcing

Prioritize staff support during the Review Preparation Period

- The PM-30 Team will provide many document requests and inquiries that should be responded to with timely and quality submittals
- Delays or absence of responding submittals can result in CARs that could be avoided.

Support to the Onsite or Virtual Review

- Be open/transparent and non-defensive during interviews
- Bring resources including teammates who are part of the process (e.g., Although the CAM is the primary focus in most interviews, and must be accountable and confident, support from Scheduler, Analysts and potentially operational/technical support is ok)

Common Themes from recent reviews

- Environmental and Culture is as important to the certification team as data tracing and project analysis
- Excessive Float tied to issues of horizontal integration, wrong connections, lack of connections, merge points, inappropriate sequencing, etc
- Comingling of Materials/Subcontracts and labor within a Work Package
- Data quality of PARs feeds
- System Integration Issues (e.g., dates and % complete misalignment, WAD to BCR, WAD POP to start/finish dates, RAM to WAD, WBS Index to Cost & Schedule)
- Span of Control and CAM authority over Staff
- Time-Phasing of BCWS matching how work is to be accomplished and QBDs
- Accruals of Cost and Estimated Actuals consistent with performance. Not reconciling BCWP & ACWP anomalies
- ACWP without BCWP or BCWP without ACWP
- Estimate at Complete (EAC) and incorporating risk
- Analysis of CPI versus TCPI
- Classifying HDV/CI Material/Equipment
- Lack of price/usage analysis

Interaction of PM-30 Team Meetings (Behind the Curtain)

- Team members are experts on the process and routinely quote from the EIA-748, ECRSOP, CAG, and METRR off the top of their heads;
- Typically, if there is a disagreement on a topic, the EIA-748/ESCROP/CAG/METRR is pulled up on screen to refresh what the actual requirement is;
- There is healthy tension amongst the team. Team members routinely challenge each other on clarity and proving an issue exists or does not exist.

EVMS Implementation Review

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- The review Director will not approve the team to go forward on a CAR without substantial discussion and proof of material and systemic non-compliance
- The team members are very resolute that compliance with EIA-748 must be viewed in the same manner as meeting Safety and Operational Standards/Requirements and will not accept that non-compliance has low consequence.
- The team views Self-Awareness and self-identification as one of the main attributes of a high performing EVM Team and will reward this behavior during the reviews and final CAR determinations (i.e., PM-30 willing to accept CARs on items that the Team has self-identified, has made attempts at casual analysis and has\is develop(ing) corrective actions rather than issuing a new CAR; PM-30 may however identify additional issues that should be included in existing CAR)
- I can attest that when I provided counter arguments and concerns, they were thoroughly considered and debated and, in some cases, changed the outcome.

Final Thoughts

- Obtaining and maintaining compliance is not inexpensive.
- Scheduling, Cost Processor, Risk tools (e.g. P6, COBRA, Acumen) are systems that take skilled practitioners, which are in high demand and are well paid.
- The Tools need to be electronically integrated with all other business systems (e.g. Financial, Procurement, Time Keeping, Accrual, Estimating) to ensure seamless transactions
- Other tools need either procured or developed to house WBS Dictionaries, Work Authorizations Documents, Variance Analysis, etc. Most desirable to have these electronically linked to avoid discrepancies in dates/dollars/signatures.
- Expert consultants for Pre-reviews/assessments, Training, and/or post review recovery are limited and expensive.
- However, cost of non-compliant practices is arguably as expensive or possibly more so.
- PM-30, in association with ASU assessed Project performance by Project Teams with varying levels of EVMS Maturity and lay out a compelling case of correlations between maturity and cost/schedule performance.
- DOE-413 requires PM-30 Certification for Capital Asset Projects >$100M with a more graded approach below this level to recognize the cost and value of full implementation
- Achieving a certifiable system cannot be done overnight; If you have not been working in a certified system and have a Capital Asset Project on the horizon, get started early

Again, I was given a great opportunity to work with the PM-30 team and have attempted to share the most important experiences I gained over the last several months. The PM-30 Team keeps at least one slot open for an EFCOG Member or corporate member to join the team with the goal to maintain a transparent process and to broaden and quicken the lessons learned throughout the Project Management community. Mel Frank, Director, Project Controls and Policy Division (PM-30) is maintaining a "rolodex" of potential EFCOG industry staff to fill this position. Please let me or the Project Delivery Working Group know if you have interest.

Rick

Office of Environmental Management Program Plan

How often have you heard the phrase…"if we just knew the plan"? Well, we now know the plan. That means the plan can be shared top to bottom, and back up again. Knowing the plan helps us make adjustments that can't be anticipated, optimizing existing plans to gain efficiencies that would otherwise go uncaptured. Access the report to view your specific site. Links are provided in the EM Newsletter article below.

New EM Program Plan Guides Progress, Opportunities to Accelerate Cleanup

WASHINGTON, D.C. – The U.S. Department of Energy Office of Environmental Management (EM) today released its EM Program Plan, a 2022 priority outlining a decision roadmap the cleanup program will use as a guide over the next two decades.

Click [here](#) *to access the EM Program Plan.*

"Cleanup progress has now reached a level that lets us focus on clearing the decks and tackling remaining hurdles to sustained success," EM Senior Advisor William "Ike" White said at the National Cleanup Workshop. "As the cleanup mission approaches a crossroads, we're down to some of the toughest and most difficult challenges."

White noted that the EM Program Plan completes a trio of outward facing planning documents, joining [EM's calendar year priorities list](#) and its [10-year Strategic Vision](#).

"This new program plan provides us with a long-range planning baseline for the entire cleanup program that we'll use to identify long-term opportunities and the challenges that we need to face well in advance," White said.

The EM Program Plan describes the scope of remaining cleanup, identifies key opportunities to better address challenges and complete cleanup earlier, and outlines a decision roadmap that EM will use as a guide over the next two decades.

EM undertakes a variety of enabling activities to support successful completion of site cleanup across all mission areas. These multi-faceted activities, outlined in the EM Program Plan, include strategic planning; program and project management and acquisition strategies; technology development and innovation; workforce strategy; infrastructure management; and regulatory and legislative initiatives.

"The EM Program Plan is a new tool to guide continuous evaluation of the status quo against viable alternatives to accelerate cleanup in key mission areas like tank waste, spent nuclear fuel, and soil and groundwater remediation," said EM Associate Principal Deputy Assistant Secretary Chung, who led development of the plan. "By adding another layer of discipline and transparency to EM decision making, the plan will help inform our work with communities, tribal nations, regulators and others to drive to completion."

EM will work with local communities, tribal nations, regulators and other stakeholders to evaluate these opportunities and identify others to support the completion of the EM mission in a safe, effective manner.

The EM Program Plan's summary roadmap highlights decisions and associated timelines critical to reduce costs and accelerate schedules.

EM is committed to effectively minimize risks through the efficiencies and innovation generated by the strategies and opportunities described in the EM Program Plan.

PARS Data Upload Format Change

Recently, a memorandum from PM-1 provided notification that the two data formats that PARS currently accepts (Microsoft Access Database (MDB) and Comma Separated Values (CSV)) will be discontinued in early 2023 and replaced by a JavaScript Object Notation (JSON) format. Projects not scheduled to reach CD-4, Transition to Operations or Project Completion, by January 2023, should work with PM's Office of Project Controls and Policy (PM-30) team to plan and implement a move to the JSON format in early 2023. Please notify EFCOG project personnel. For additional information please contact either Mel Frank or Zac West. Click on the image at right to see additional details about the change.
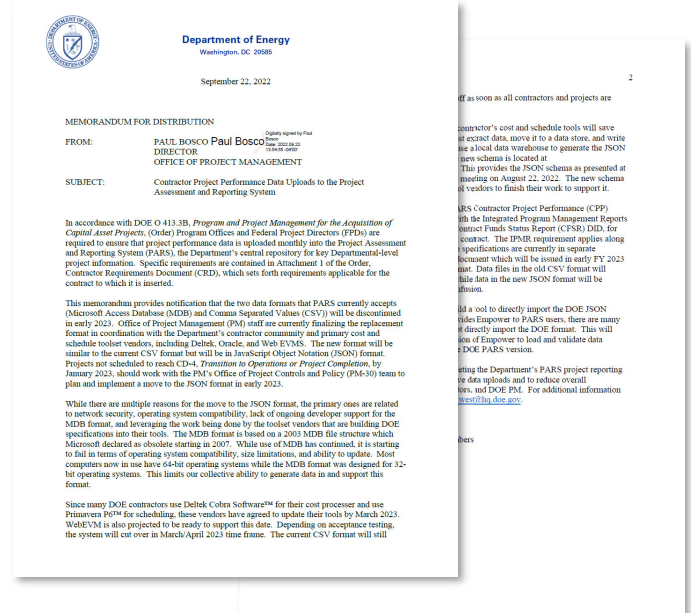
Is your data and info

Current,

Accurate,

Complete,

Repeatable,

Auditable and

Compliant©?

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Promoting Project Management Excellence

SEPTEMBER 2022

IN THIS ISSUE:

Director's Corner 1

DOE PM Escalation Model

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"Project management can be defined as a way of developing structure in a complex project, where the independent variables of time, cost, resources and human behavior come together."

~ Rory Burke, author of Fundamentals of Project Management: Tools and Techniques

It Is Not One World

Office of Project Management Directives

The *Practitioner* has had many different types of articles over the past 37 issues. This month we refocus closer to home to recognize and appreciate the ease and availability of data that is at our fingertips, thanks to a collective, continuous, drive to be better tomorrow than we are today.

In this month's *Practitioner* we highlight the Project Management orders and guides for DOE and NNSA. A significant amount of effort is required to provide and maintain current and useful data and information. Some of you may even remember searching for "dog-eared", coffee-stained hard copies in stacks of documents in your old grey, metal, government-issued desk, book stand or file cabinet.

Fortunately, in today's environment it's as simple as "point and click" to get the latest information at your fingertips to manage your project. Hats off to all that make that happen every day, everywhere! We salute you!!! It is not one world!

[Office of Project Management Directives](#)

These directives contain project management-related orders and guides that allow federal project directors and project teams to comply with applicable laws and regulations while putting in place most effective project management practices that increase probability of project success.

Pease see the [Project Management Lexicon of Terms](#) for a DOE-recognized list of project management terms and acronyms. To view the August 2022 Project Dashboard, click [here](#).

NUMBER	TITLE	DESCRIPTION	LAST UPDATED
DOE O 413.3B (Chg 6) (MinChg)	Program and Project Management for the Acquisition of Capital Assets	The Order provides DOE and NNSA with program and project management direction for the acquisition of capital assets with the goal of delivering projects within the original performance baseline (PB), cost and schedule, and fully capable of meeting mission performance, safeguards and security, and environmental, safety, and health requirements unless impacted by a directed change. Implements OMB Circulars A-11, A-123 and A-131. Supersedes Chg 5 (MinChg), dated 4-12-2018.	1/12/2021
DOE G 413.3-1	Managing Design and Construction Using Systems Engineering	This Guide provides the Department of Energy's federal project directors with the methodologies and tools needed to plan, implement and complete assigned projects using a Systems Engineering approach in accordance with the requirements of DOE O 413.3A.	10/22/2015
DOE G 413.3-2	Quality Assurance Guide for Project Management	This Guide provides acceptable approaches for implementing the Quality Assurance requirements and criteria of DOE O 413.3A related to the development and implementation of a Quality Assurance Program for the project.	10/22/2015

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NUMBER	TITLE	DESCRIPTION	LAST
DOE G 413.3-3A	Safeguards and Security for Program and Project Manage-	The Guide provides a methodology for implementing the safeguards and security requirements of DOE O 413.3B.	10/22/2015
DOE G 413.3-4A	Technology Readiness Assessment	The Guide assists individuals and teams involved in conducting Technology Readiness Assessments (TRAs) and developing Technology Maturation Plans (TMPs) for the DOE capital asset projects subject to DOE O 413.3B.	10/22/2015
DOE G 413.3-5A	Performance Baseline	This Guide identifies key PB elements, development processes, and practices; describes the context in which DOE PB development occurs; and suggests ways of addressing the critical elements in PB development.	10/22/2015
DOE G 413.3-6A	High Performance Sustainable Building	This Guide provides approaches for implementing the High Performance Sustainable Building (HPSB) requirements of DOE Order 413.3B, Program and Project Management for the Acquisition of Capital Assets.	10/22/2015
DOE G 413.3-7A Chg2	Risk Management Guide	The purpose of this guide is to describe effective risk management processes. The continuous and iterative process includes updating project risk documents and the risk management plan and emphasizes implementation communication of the risks and actions taken.	11/22/2021
DOE G 413.3-9A	Project Review Guide for Capital Asset Projects	This Guide is a tool for federal project directors (FPDs), integrated project teams and federal program managers in planning and executing project reviews outlined in DOE O 413.3B. It addresses the reviews that are conducted from outside the project team during the lifecycle of a project based on the critical decision (CD) milestones, complexity, and duration of a project.	9/14/2018
DOE G 413.3-10B	Integrated Project Management Using the Earned Value Management System	This guide provides information for improving the integration of the Earned Value Management System (EVMS) with project management planning, execution, and control processes. It also reviews U.S. Department of Energy (DOE) interpretation, application, and implementation of the Electronic Industries Alliance (EIA) industry standard, EIA-748, for EVMS compliance.	4/20/2022

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NUMBER	TITLE	DESCRIPTION	LAST UPDATED
DOE G 413.3-12	Project Definition Rating Index (PDRI) (Spreadsheet)	This Guide assists individuals and teams involved in conducting assessments of project definition (i.e., how well front-end planning has been conducted to define project scope) using a numerical project management tool developed by the Construction Industry Institute (CII), tailored for DOE use. Called the Project Definition Rating Index (PDRI), the PDRI is a simple but powerful tool that facilitates the measurement of the degree of scope definition for completeness for traditional construction projects, both nuclear and non-nuclear.	10/22/2015
DOE G 413.3-13	Acquisition Strategy for Capital Asset Projects	This Guide serves as a tool for federal project directors (FPDs) and the Integrated Project Team (IPT) for developing a project acquisition strategy document. The DOE O 413.3A requires the development and approval of the acquisition strategy for projects with total project cost (TPC) of $20M or greater, as part of the Critical Decision-1 (CD-1).	10/22/2015
DOE G 413.3-15A	Project Execution Plans	The scope of this guide includes basic aspects of the development and maintenance of the plan for projects of any size and complexity for the benefit of the federal project director, who is approved by the acquisition executive, and incorporates contractor input as appropriate. Integrated project teams, program managers (if applicable), program offices, acquisition executives, and contractor project managers can also benefit from the suggestions in this guide.	9/14/2018
DOE G 413.3-16A	Project Transition/ Closeout (CD-4)	The guide provides nonmandatory approaches for implementing the requirements of DOE O 413.3B.	10/22/2015
DOE G 413.3-17	Mission Need Statement	The guide supports DOE O 413.3A, Program and Project Management for the Acquisition of Capital Assets, dated 7-28-06, by providing suggested content, definitions, and examples for writing a clear statement to support an acquisition executive's decision to initiate exploration of options to fulfill a capability gap, which may include a capital asset acquisition.	10/22/2015
DOE G 413.3-18A	Integrated Project Team Guide for Formation and Implementation	The guide provides detailed guidance of the preferred processes to form and implement an Integrated Project Team (IPT) in support of proper project execution as prescribed in DOE O 413.3B.	10/22/2015

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NUMBER	TITLE	DESCRIPTION	LAST UPDATED
DOE G 413.3-19, Chg 2	Staffing Guide for Project Management	This Guide provides an approach to determining the appropriate level and type of federal personnel needed to effectively plan, direct, and oversee project execution.	10/22/2015
DOE G 413.3-20	Change Control Management	The Guide provides a suggested approach and uniform guidance for managing project and contract changes through applying the requirements of DOE O 413.3B.	10/22/2015
DOE G 413.3-21A	Cost Estimating Guide (less rolling in sections from and cancelling DOE G	This Guide provides uniform guidance and best practices that describe the methods and procedures that could be used in all programs and projects at DOE for preparing cost estimates.	6/6/2018
DOE G 413.3-22	Analysis of Alternatives Guide	This Guide assists individuals and teams in conducting Analysis of Alternatives (AoA) for capital asset projects and programs consistent with published Government Accountability Office (GAO) best practices. The suggested DOE tailored process uses a systems engineering methodology that integrates requirements analysis based on mission need, identification and analysis of alternatives, risk identification and analysis, and concept exploration in order to evolve a cost effective, preferred alternative to meet a mission need.	6/6/2018
DOE G 413.3-23	Nuclear Facilities Commissioning	This guide addresses best practices for planning and executing the commissioning of equipment, components, structures, and systems comprising nuclear facilities. The best practices in this guide come from recent lessons learned from nuclear construction projects. The Department of Energy (DOE) has restarted or started up nearly 200 nuclear facilities since 1992. Projects that follow this non-mandatory guidance will have a thorough, carefully planned process for confirming that nuclear facilities conform to design requirements thus increasing the likelihood that they will perform as intended following the introduction of radioactive materials.	8/30/2019
DOE G 413.3-24	Planning and Scheduling	This guide assists project teams by outlining project scheduling principles and best practices in planning and executing capital asset projects to meet the requirements of DOE Order (O) 413.3B, Program and Project Management for the Acquisition of Capital Assets.	4/8/2022

Just for Fun: September's Notable Events and Famous Birthdays

1 — Singer Conway Twitty was born (1933), **World War II started when Germany invaded Poland** (1939), TV host Dr. Phil was born (1950), pitcher Masanori Murakami became the first Japanese major league player (1964), Muammar al-Quaddafi overthrew the Libyan government (1969), and the Soviet Union shot down a South Korean airliner (1983).

2 — World War II ended as Japan officially surrendered to the Allies (1945), quarterback/sportscaster Terry Bradshaw (1948), actor Keanu Reeves (1964) and actress Selma Hayek (1968) were born, and the first ATM opened (1969).

3 — The American Revolution officially ended with the Treaty of Paris (1783), actor Charlie Sheen was born (1965), and a siege in a Russian school ended with more than 300 people dead (2004)

4 — Apache chief Geronimo became the last Indian warrior to surrender to U.S. troops (1886), the first coast-to-coast telecast of a presidential speech was broadcast (1951), swimmer Mark Spitz won a then-record 7th Olympic gold medal (1972), singer Beyonce was born (1981), Google became incorporated (1998), and Kelly Clarkson won the first American Idol (2002).

5 — The first Continental Congress convened (1774), Sioux chief Crazy Horse was killed (1877), comedian/actor Bob Newhart was born (1929), terrorists attacked Israeli athletes at the Olympics — the event resulted in 18 deaths (1972), President Gerald Ford survived an assassination attempt (1975), and Katie Couric debuted as the first solo female network news anchor (2005).

6 — Ferdinand Magellan completed the first circumnavigation of the globe (1522), the first military tank was built (1915), and baseball "ironman" Cal Ripken played in his 2,131st consecutive game (1995).

7 — The U.S. government was nicknamed "Uncle Sam" (1813) and **musician Buddy Holly was born** (1936).

8 — Singer Patsy Cline was born (1932), Italy surrendered to the Allies (1943), American troops occupied southern Korea (1945), President Gerald Ford pardoned former president Richard Nixon (1974), the Oprah Winfrey Show was televised nationally for the first time (1986), and Mark McGwire broke the major league single-season home run record with his 62nd (1998).

9 — The "United States of America" is named by Congress (1776), California became the 31st U.S. state (1850), KFC founder Colonel Sanders was born (1890), Esther Cleveland became the first presidential baby born in the White House (1893), singer Otis Redding was born (1941), a Japanese pilot conducted the only air attack on the U.S. mainland at Mt. Emily in Oregon (1942), and quarterback/sportscaster Joe Theismann (1949) and actor Adam Sandler (1966) were born.

10 — The first-ever DUI arrest was made in London (1897), golfer Arnold Palmer was born (1929), the guillotine was used for the last time (1977), and the grunge era began as Nirvana's "Smells Like Teen Spirit" was released (1991).

11 — Football coaching legends Bear Bryant (1913) and Tom Landry (1924), and actor/singer Harry Connick Jr. (1967) were born, **Pete Rose broke the major league record for career hits with his 4,192nd** (1985), and "Never Forget" (2001).

12 — Track champion Jesse Owens (1913) and singer Barry White (1944) were born.

13 — "The Star-Spangled Banner" was written (1814), physician Walter Reed (1851), World War 1 general John J. Pershing (1860), and author Roald Dahl (1916) were born, a four-day riot at New York's Attica Prison ended with 39 deaths (1971), and rapper Tupac Shakur died after being shot six days earlier (1996).

14 — Theodore Roosevelt became president after the death of William McKinley, who was shot eight days earlier (1901), the Soviet Union sent the first man-made object to the moon (1959), and pitcher Denny McLain became the last 30-game winner in the major leagues (1968).

15 — President William Taft was born (1857), transcontinental mail service began (1858), author Agatha Christie (1890), actor Tommy Lee Jones and director Oliver Stone (1946), and quarterback Dan Marino (1961) were born, four black girls were killed in a bomb blast at a church in Birmingham, Ala. (1963), and Muhammad Ali became the first boxer to win the world heavyweight title three times (1978).

16 — The Mayflower departed England for the New World (1620), the Mexican War of Independence began (1810), General Motors was incorporated (1908), blues musician B. B. King was born (1924), the Selective Service and Training Act was signed by President F.D. Roosevelt (1940), and a gunman killed 12 people at the Navy Yard in Washington, D.C. (2013).

17 — The U.S. Constitution was signed (1787), the Battle of Antietam was fought, resulting in nearly 23,000 casualties (1862), actor John Ritter was born (1948), NASA unveiled its first space shuttle (1976), and a peace agreement between Israel and Egypt was signed (1978).

18 — **The cornerstone of the U.S. Capitol was laid** (1793), and cycling champion Lance Armstrong was born (1971).

19 — President James A. Garfield died from a gunshot wound he received two months earlier (1881), New Zealand became the first country to allow women to vote (1893), the first underground nuclear explosion was conducted in Nevada (1957), and TV host Jimmy Fallon was born (1974).

20 — Author Upton Sinclair was born (1878), Chester Arthur became U.S. president (1881), and actress Sophia Loren (1934) and hockey star Guy LaFleur (1951) were born.

21 — France's monarchy was abolished and the First Republic established (1792), and authors H.G. Wells (1866) and Stephen King (1947), actor Bill Murray (1950), and singer Faith Hill (1967) were born.

22 — President Lincoln delivered the Emancipation Proclamation (1862), baseball manager Tommy Lasorda (1957) and singer Joan Jett (1960) were born, the Peace Corps was established (1961), President Ford survived a second assassination attempt (1975), the first Farm Aid concert was held (1985), and the sitcom *Friends* made its debut (1994).

23 — Neptune was discovered (1846), and singers Ray Charles (1930) and Bruce Springsteen (1949) were born.

24 — The Supreme Court was established (1789), Muppets creator Jim Henson was born (1936), and the Honda Motor Company was incorporated (1948).

25 — The Bill of Rights was approved by Congress (1789), TV journalist Barbara Walters (1931), actor Michael Douglas (1944), and rapper/actor Will Smith (1968) were born, and **Sandra Day O'Connor became the first female Supreme Court justice** (1981).

26 — Composer George Gershwin was born (1898), the first American soldier was killed in Vietnam (1945), West Side Story opened on Broadway (1957), the first televised presidential debate was held between JFK and Nixon (1960), and the Baltimore Orioles became the last major league team with four 20-game winners (1971).

27 — Founding father Samuel Adams was born (1722), the Axis powers were formed (1940), and singers Meat Loaf (1947) and Shaun Cassidy (1959) were born.

28 — Painter Michelangelo (1573) and TV host Ed Sullivan (1901) were born, Ted Williams became the last major league player to hit .400 (1941) and hit a home run in his last career at-bat (1960), and actress Gwyneth Paltrow was born (1973).

29 — Nuclear physicist Enrico Fermi (1901), and singers Gene Autry (1907) and Jerry Lee Lewis (1935) were born, Willie Mays made his famous over-the-shoulder catch in the World Series (1954), and Stacy Allison became the first American woman to summit Mt. Everest (1988).

30 — Babe Ruth set the major league record for home runs in a season with his 60th (1927), singer Johnny Mathis was born (1935), the USS *Nautilus* was commissioned as the first nuclear submarine (1954), actor James Dean died (1955), and the first large-scale antiwar demonstration in the U.S. was held (1964).