

**ATR REVIEW PLAN**  
**USING THE NWD ATR REVIEW PLAN TEMPLATE**

**Project Name:** Kanopolis Hydrologic Adequacy Study

**Project Location:** Kanopolis Dam, KS

**Project P2 Number:** 351875

**Project Manager or POC Name:** Chance Bitner

**NWD Original Approval Date:** 16 NOV 2012



**US Army Corps  
of Engineers** ®

*Approved Version: 13 July 2011. Printed Copies are for "Information Only". The controlled version resides on the shared documents folder of the NWD SharePoint site at: [EC 209 Implementation Guidance ATR Template Enclosure 2](#)*



DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, NORTHWESTERN DIVISION  
PO BOX 2870  
PORTLAND OR 97208-2870

CENWD-RBT

16 NOV 2012

MEMORANDUM FOR Commander, Kansas City District (CENWK-ED, Mr. Bitner)

SUBJECT: Review Plan (RP) Approval for Kanopolis Dam Hydrologic Adequacy Study,  
Kansas City District, Northwestern Division

1. References:

- a. RP for Kanopolis Dam Hydrologic Adequacy Study (Encl).
- b. EC 1165-2-209, Civil Works Review Policy Change 1, 31 January 2012.

2. Reference 1.a. above has been prepared in accordance with reference 1.b. above.

3. The RP has been coordinated with the Business Technical Division, Northwestern Division, U.S. Army Corps of Engineers, which is the lead office and point of contact to execute this plan. The RP includes District Quality Control and Agency Technical Review and has been coordinated with Business Technical Division as the Review Management Office (RMO). The RMO Point of Contact is Brad Bird at [REDACTED]

4. I hereby approve this RP, which is subject to change as circumstances require, consistent with the study development process and the Project Management Business Process. Subsequent revisions to this Review Plan or its execution will require written approval from this office.

5. For further information, please contact Mr. Steve Bredthauer at [REDACTED].

Encl

  
ANTHONY C. FUNKHOUSER, P. E.  
COL, EN  
Commanding



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, KANSAS CITY DISTRICT  
635 FEDERAL BUILDING  
601 E 12<sup>TH</sup> STREET  
KANSAS CITY MO 64106-2824

CENWK-ED

18 October 2012

MEMORANDUM FOR Commander, CENWD, ATTN: Mr. Stephen Bredthauer

SUBJECT: Kanopolis Dam Hydrologic Adequacy Study Review Plan (P2#351875)

1. The review plan for the Kanopolis Dam Hydrologic Adequacy Study is attached for Northwestern Division's review and approval. The review plan was prepared in accordance with EC 1165-2-209 and uses Northwestern Division's review plan template for ATR for implementation documents and other work products in accordance with the policy memo dated 24 May 2011.
2. The Kanopolis Dam Hydrologic Adequacy Study is currently in the approval phase.
3. The point of contact for this memorandum is the Hydrology and Hydraulics Section Chief, Chance Bitner at [REDACTED].

  
DAVID L. MATHEWS, P.E.  
Chief, Engineering Division

# DQC/ATR REVIEW PLAN

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# **ATR Review Plan for Kanopolis Hydrologic Adequacy Study**

## **1. PURPOSE AND REQUIREMENTS.**

**a. Purpose.** This Review Plan (RP) describes Agency Technical Review (**ATR**) associated with calculation of a new Inflow Design Flood (IDF) for Kanopolis Dam, KS. The RP and the completed RP Specifics attachment together describe the risks considered and the review plan proposed for this product.

**b. General Process.** The PDT considers the project risks and selects an appropriate RP Template based on the risks per EC 209. The risk consideration process is determined by Districts as appropriate to develop a risk informed review plan strategy.

1) When the District has considered the project risks and determined the applicability of this template, the PM/PDT prepares the “RP Specific” information in Attachment 1 and submits with the RP Template to NWD for approval. The RP Specifics provide the essential elements of the RP such as the scope, project cost, the review team and capabilities, review schedules and budgets and points of contacts.

2) The RP Specifics are coordinated with the appropriate levels of management in the District and the NWD. Potentially the RP may also need to be coordinated with the Risk Management Center (RMC) and others such as the relevant Planning Center of Expertise (PCX) if required. This may be necessary in cases where there is debate on the project risks, required review levels, the review team composition and areas of responsibility.

3) The approved RP Specifics and RP Template information together shall describe the project scope, review plan, schedule and budget in sufficient detail to allow review and approval for the RP. The RP information is a component of the Quality Management Plan within the Project Management Plan. Once approved, the RP is documented in the project PMP/QMP and project files and also placed on the District Website for a minimum of 30 days.

**c. Applicability.** Applicability of the review plan template is determined by NWD. Refer to the criteria provided below. This review plan template is applicable, **ONLY**, for projects that;

- Are agreed to require ATR review based on risk-informed decision process.
- Are agreed to **NOT** require Independent External Peer Review (IEPR) or Safety Assurance Review (SAR) based on a risk-informed decision process.
- Do **NOT** require an Environmental Impact Statement (EIS) for the project.
- And, the project for this review plan is **NOT** producing decision documents.

## **d. References**

Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010  
Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006

## **ATR Review Plan for Kanopolis Hydrologic Adequacy Study**

ER 1105-2-100, Planning Guidance Notebook, Appendix F, Continuing Authorities Program, Amendment #2, 31 Jan 2007

ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007

### **2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION**

The RMO for **ATR** is Northwestern Division (NWD) unless determined otherwise. The USACE Risk Management Center (RMC) shall serve as the RMO for Dam Safety Modification projects and Levee Safety Modification projects. NWD will coordinate and approve the review plan. The home District will post the approved review plan on its public website.

### **3. REVIEW FUNDAMENTALS**

- a. The USACE review process is based on a few simple but fundamental principles:
  - Peer review is key to improving the quality of work in planning, design and construction;
  - Reviews shall be scalable, deliberate, life cycle and concurrent with normal business processes;
  - A review performed outside the home district shall be completed on all decision and implementation documents. For other products, a risk informed decision as described in EC 209 will be made whether to perform such a review.
  
- b. The EC 209 outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review.

### **4. DISTRICT QUALITY CONTROL (DQC)**

The RMO for DQC is the home District. In accordance with EC 209 all work products and reports, evaluations, and assessments shall undergo necessary and appropriate District Quality Control (DQC).

DQC is the internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the project Quality Management Plan (QMP) of the Project Management Plan (PMP).

The DQC is the internal quality control process performed by the supervisors, senior staff, peers and the PDT within the home District and is managed by the home District. DQC consists of;

- a. Quality Checks and reviews. These are routine checks and reviews carried out during the development process by peers not responsible for the original work.

## **ATR Review Plan for Kanopolis Hydrologic Adequacy Study**

These are performed by staff such as supervisors, team leaders or other senior designated to perform internal peer reviews.

- b. PDT reviews. These are reviews by the production team responsible for the original work to ensure consistency and coordination across all project disciplines.

**DQC** will be performed on the products in accordance with the QMP within the PMP.

### **5. AGENCY TECHNICAL REVIEW (ATR)**

A risk informed process was completed for this project in accordance with EC 209. **See paragraph 7, RISK INFORMED DECISIONS.**

The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers.

ATR will be conducted by a qualified team from outside the home District that is not involved with the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside the home MSC. In limited cases, when appropriate and independent expertise can be secured from Centers or Laboratories or when proper expertise cannot be secured otherwise, NWD may approve exceptions.

### **6. REVIEW DOCUMENTATION**

**a) Documentation of ATR.** DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

- (1) The review concern – identify the product’s information deficiency or incorrect application of policy, guidance, or procedures;
- (2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not been properly followed;
- (3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and;
- (4) Where appropriate, provide a suggested action needed to resolve the comment or concern.

## **ATR Review Plan for Kanopolis Hydrologic Adequacy Study**

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist.

The ATR documentation in DrChecks will include the text of each concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1110-2-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

ATR shall be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team).

### **7. RISK INFORMED DECISIONS**

- a. **ATR:** (Source: EC 209, paragraph 15). The process and methods used to develop and document the risk-informed decisions are at the discretion of the District but must be appropriate for the risk and complexity of the project. The following questions and additional appropriate questions were considered;
1. Does it include any design (structural, mechanical, hydraulic, etc)?
  2. Does it evaluate alternatives?
  3. Does it include a recommendation?
  4. Does it have a formal cost estimate?
  5. Does it have or will it require a NEPA document?
  6. Does it impact a structure or feature of a structure whose performance involves potential life safety risks?
  7. What are the consequences of non-performance?
  8. Does it support a significant investment of public monies?
  9. Does it support a budget request?
  10. Does it change the operation of the project?
  11. Does it involve ground disturbances?
  12. Does it affect any special features, such as cultural resources, historic properties, survey markers, etc, that should be protected or avoided?
  13. Does it involve activities that trigger regulatory permitting such as Section 404 or stormwater/NPDES related actions?
  14. Does it involve activities that could potentially generate hazardous wastes and/or disposal of materials such as lead based paints or asbestos?

## **ATR Review Plan for Kanopolis Hydrologic Adequacy Study**

15. Does it reference use of or reliance on manufacturers' engineers and specifications for items such as prefabricated buildings, playground equipment, etc?
16. Does it reference reliance on local authorities for inspection/certification of utility systems like wastewater, stormwater, electrical, etc?
17. Is there or is there expected to be any controversy surrounding the Federal action associated with the work product?

\*Note: A "yes" answer to questions above does not necessarily indicate ATR is required, rather it indicates an area where reasoned thought and judgment should be applied and documented in the recommendation.

**Decision on ATR:** The District considered the risks and determined that **ATR was required** considering the project risks. ATR was performed on the product in accordance with the District QMP and this RP. **See Attachment 1** for RP Specifics.

- b. **INDEPENDENT EXTERNAL PEER REVIEW (IEPR).** The District considered risks and risk triggers for Type I IEPR and Type II IEPR, also referred as a Safety Assurance Review (SAR) as described in EC 1165-2-209.
  - I. **Type I IEPR** is required for decision documents under most circumstances. This project does not involve the production of decision documents.

**Decision on Type I IEPR:** The District considered these risks and determined that **Type I IEPR is not required.**

- II. **Type II IEPR (SAR).** Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.
  - Any project addressing **hurricane and storm** risk management and **flood risk** management or;
  - any other project where Federal action is justified by **life safety** or;
  - the failure of the project would pose a **significant threat to human life.**
  - This applies to new projects and to the major repair, rehabilitation, replacement, or modification of existing facilities (based on identified risks and threats).

## **ATR Review Plan for Kanopolis Hydrologic Adequacy Study**

Other Factors to consider for Type II IEPR (SAR) review of a project, or components of a project;

- The project involves the use of innovative materials or techniques where the engineering is based on novel methods, presents complex challenges for interpretations, contains precedent-setting methods or models, or presents conclusions that are likely to change prevailing practices
- The project design requires redundancy, resiliency, and robustness.
- The project has unique construction sequencing or a reduced or overlapping design and construction schedule; for example, significant project features accomplished using the Design-Build or Early Contractor Involvement (ECI) delivery systems.

**Decision on Type II IEPR:** Based on the information and analysis provided in the preceding paragraphs of this review plan, the project covered under this plan is excluded from IEPR because it does not meet the mandatory IEPR triggers and does not warrant IEPR based on a risk-informed analysis. The District considered these risks and determined that **Type II IEPR (SAR) is not required** for the product.

### **8. POLICY AND LEGAL COMPLIANCE REVIEW**

All documents will be reviewed throughout the process for their compliance with law and policy. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

This review plan template is not intended to describe requirements and processes to conduct policy and legal compliance review, or legal sufficiency reviews.

### **9. TEMPLATE APPROVAL**

NWD is responsible for maintaining the current version of this Review Plan template and ensuring the information accurately describes the criteria and considerations necessary to arrive at a risk informed decision. The review plan template is a living document and is subject to change.

The home District is responsible to complete the Review Plan Template Cover page, adjust the Table of Contents and the complete Review Plan specifics in **Attachment 1**. Significant changes to the review plan specifics (such as changes to the scope and/or level of review) should be re-approved by NWD. The completed Template information and the Attachment 1 will be submitted to the NWD for coordination and approval.

# ATR Review Plan for Kanopolis Hydrologic Adequacy Study

## ATTACHMENT 1 REVIEW PLAN SPECIFICS

The information in this attachment is prepared by the District PM/PDT for the project specific information required for this review plan. The DQC is managed by the District and is described in the PMP/QMP. This document should be attached or included in the PMP/QMP to document the ATR.

**Reiterate Decision on Type II IEPR (SAR):** This document has stated this project does not involve the production of decision documents and therefore does not reiterate a decision to exclude Type I IEPR. The project covered under this plan is excluded from Type II IEPR (SAR) because it does not meet the Type II IEPR triggers and other factors necessary to consider as described in EC 1165-2-209. The District considered these risks and determined that **Type II IEPR (SAR) is not required** for the product.

Type II IEPR was deemed unnecessary for this product since it is not a design or construction activity.

### A-1. PROJECT INFORMATION

a. **Study/Project Description.** Due to updated criteria since the design of Kanopolis Dam, the Inflow Design Flood (IDF) for the project was reevaluated in accordance with current criteria (Probable Maximum Flood) for a Standard 1 dam as found in ER 1110-8-2(FR). Also the adequacy of the dam and the spillway to safely pass the new IDF were evaluated.

b. **Current Total Project Cost.** Current total project cost since FY2005 is \$228,625. Work was performed during four different fiscal years. Further work is expected to cost \$17,000 and will be completed in CY 2013 contingent on availability of funds.

c. **Required ATR Team Expertise.** The only discipline involved in the current technical study is hydrologic engineering. An ATR team of one senior hydraulic engineer was considered appropriate for reviewing this analysis. ATR team and required expertise;

ATR Team Members/Disciplines	Expertise Required
ATR Lead/Hydraulic Engineer or Hydrologist	The ATR lead should be a senior professional with experience in hydrology or hydraulic engineering and conducting ATR.

## ATR Review Plan for Kanopolis Hydrologic Adequacy Study

### A-2. REVIEW SCHEDULES AND COSTS

#### a. ATR Schedule.

Review Milestone	Review Products	Date Planned
<b>100% ATR review</b>	Memo for Record documenting IDF and Kanopolis Dam hydrologic inadequacy	07 AUG 2012
<b>100% backcheck</b>	Same as 100% ATR review	05 SEP 2012
<b>ATR Certification</b>	Same as 100% ATR review	12 OCT 2012

#### b. ATR COSTS - Labor/Expenses.

Review Milestone	#reviewers/total hours	Approximate cost/hr	Totals
<b>100% ATR review</b>	1/30	120	\$ 3,600
<b>100% backcheck</b>	1/10	100	\$ 1,000
<b>ATR Certification</b>	1/0.5	120	\$ 60
<b>Total ATR costs</b>			\$ 4,660

#### c. Engineering Models. The following engineering models are anticipated to be used in the development of the implementation documents or other work products:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
<b>HEC-HMS 3.5</b>	Hydrologic Modeling System was used to develop runoff for the Probable Maximum Precipitation (PMP) and translate it into streamflow hydrographs.	CoP Preferred
<b>HEC-RAS 4.2 Beta</b>	HEC's River Analysis System was used to route Probable Maximum Flood (PMF) hydrographs for Kanopolis Dam through Cedar Bluff Reservoir and the Smoky Hill River as well as to simulate a breach failure of Cedar Bluff dam and the resulting hydrograph.	CoP Preferred
<b>HMR 52</b>	Program was used to compute the PMP for the Smoky Hill River Basin upstream of Kanopolis Dam.	CoP Preferred

## ATR Review Plan for Kanopolis Hydrologic Adequacy Study

### A-3. REVIEW PLAN POINTS OF CONTACT

The Review Management Organization for ATR will be NWD unless noted otherwise.

Public questions and/or comments on this review plan can be directed to the following points of contact:

Contact	Role	Title	Office/District/Division	Email
Chance Bitner	Section Chief	Civil Engr. – Hydraulics	CENWK-ED-HH	Chance.J.Bitner @usace.army.mil
Stephen Bredthauer	RMO - Point of contact	Quality Assurance Manager	Northwestern Division, US Army Corps of Engineers	Stephen.R.Bredthauer @usace.army.mil

**A-4. PROJECT DELIVERY TEAM (PDT) ROSTER.** Before posting to websites for public disclosure of the RP, it may be necessary to remove names and contact information for Corps employees to comply with security policies.

PDT Roster				
Name	Discipline/Role	District/Agency	email	Phone
	H&H Chief	CENWK-ED-HH		
	Civil Engineer – Hydraulics	CENWK-ED-HH		
	Hydrologist	CENWK-ED-HH		

**A-5. ATR TEAM ROSTER .** Before posting to websites for public disclosure of the RP, it may be necessary to remove names and contact information for Corps employees to comply with security policies.

Agency Technical Review (ATR) Team				
Name	Discipline/Role	District/Agency	email	Phone
	Hydraulic Engineer	CEMVP-EC-H		

## ATR Review Plan for Kanopolis Hydrologic Adequacy Study

### A-6. REVIEW PLAN SPECIFICS - APPROVAL

The information provided in the Review Plan Template and the Review Plan Specifics in **Attachment 1** are hereby submitted for approval.

NWD will review this plan and route by NWD staffing sheet. If the plan is complete and appropriate for the risk and complexity of the project/products, the NWD will recommend approval by the appropriate Senior Executive Service (SES) in NWD. The NWD approval memorandum will be sent to the District PM responsible for the plan. The NWD approval memorandum shall be documented with the review plan, and the approval date should be noted on the cover sheet of this document.

The approved RP will be posted on the district's internet site at <http://www.nwk.usace.army.mil/Missions/CivilWorks/CivilWorksProgramsandProjects/CivilWorksReviewPlans.aspx>.

Approved revisions should be recorded in the A-7 block below.

### A-7 REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number	Date Approved
Original			
Revision 1			

# ATR Review Plan for Kanopolis Hydrologic Adequacy Study

## ATTACHMENT 2

### B-1. ACRONYMS AND ABBREVIATIONS

<u>Acronyms</u>	<u>Defined</u>
ATR	Agency Technical Review
CAP	Continuing Authorities Program
DCW	Director of Civil Works
DQC	District Quality Control
EC	Engineering Circular
ECI	Early Contractor Involvement
EIS	Environmental Impact Statement
ER	Engineering Regulation
FAQ's	Frequently Asked Questions
HQUSACE	Headquarters, U.S. Army Corps of Engineers
IEPR	Independent External Peer Review
NWD	Northwestern Division
MSC	Major Subordinate Command
PCX	Planning Center of Expertise
PDT	Project Delivery Team
PMP	Project Management Plan
QA	Quality Assurance
QMP	Quality Management Plan
QMS	Quality Management System
RIT	Regional Integration Team
RMC	Risk Management Center
RMO	Review Management Organization
RP	Review Plan
SES	Senior Executive Service
SAR	Safety Assurance Review (also referred as Type I IEPR)