

✓ 9-8-06

ENTERED

14.4.9.2

DATE RECEIVED	FACILITY NAME	COUNTY NO.	PROGRAM AREA CODE	FACILITY TYPE CODE	SUBJECT AREA CODE
1-11/86	4 DES MOINES ICA	5 77	6 CP	7 C05	8 333 333 CLARIFIER FLOW SPLITS

RULE REFERENCE	DESIGN STANDARD REFERENCE	DECISION	APPEAL ACTION
1 567-64.2	10 14.4.9.2 14.4.9.3	11 Approved 3-6-87	12

ENGINEER	VARIANCE RULE
13 Donahue / Metcalf & Eddy	14 567-64.2(9)c.

15. DESCRIPTION OF VARIANCE REQUESTED: ALLOW SYMETRY TO PROVIDE FLOW SPLITS TO THE CLARIFIERS, RATHER THAN PROVIDING UNSTABLE, MEASURABLE FLOW SPLITTING PROVISIONS, AS REQUIRED BY DESIGN STANDARDS

ENGINEER'S JUSTIFICATION: LARGE FLOWS

EQUIVALENT EFFECTIVENESS

SEE ATTACHED DISCUSSION ON

SYMMETRY OF STRUCTURE AND PIPING. CLARIFIER WEIRS CAN ALSO BE USED FOR ADJUSTMENT. EQUALIZING FLOWS TO CLARIFIERS IS BASED ON SYMMETRY AND THE WEIRS BEING AT THE SAME ELEVATION. THIS CONCEPT HAS BEEN USED AT SEVERAL LARGE PLANTS. THERE IS ALSO LIMITED AND VALUABLE HEAD LOSS AVAILABLE FOR SUCH FACILITIES IN THIS CIRCUMSTANCES.

17. DEPARTMENTS JUSTIFICATION: THE DESIGN DOES NOT MEET THE
STANDARD LITERALLY. LITERATURE CITES CONCERNS ^{AND SUPPORT} FOR THIS
CAPABILITY REQUIREMENT OF THE STANDARD. HOWEVER, WE
REVIEWED THE REQUEST ON THE BASIS OF THE INTENT OF THE
STANDARD - PROVIDE EQUAL SPLITTING. CONTROL BY ^{CLARIFIER} WEIR
ADJUSTMENT IS NOT ACCEPTABLE. ENGINEER STRESSED THAT CAREFUL
DESIGN AND CONTROL OF TOLERANCES IN CONSTRUCTION DECREASE THE
IMPACT OF RELATIVE DIFFERENCES IN CONSTRUCTED AUTOMATIC FLOW
SPLITS IN A FACILITY OF THIS SIZE. THE PROPOSED DESIGN
IS CONSIDERED ONE OF THE BETTER FOR SYMMETRICAL SPLITTING.
THIS TYPE STRUCTURE WAS APPROVED FOR THE PRIMARY UNITS
HOWEVER, FINAL CLARIFIERS APPLICATION. IS CONSIDERED MORE CRITI
THE DESIGN CAN PROVIDE THE DESIRED SPLIT. IT DOES HAVE LIMITED
FLEXIBILITY WHICH I SUGGEST TO NOTE IN OUR APPROVAL. THE CITY IS AWARE
OF THE ISSUE AND FEELS COMFORTABLE WITH THE DESIGN.

18. PRECEDENTS USED: _____

1. STAFF REVIEWER:

ROGER SCHLETZBAUM

2. SUPERVISOR:

[Signature]

3. AUTHORIZED BY:

David McAllister 3/6/87.