

CONCEPTUAL FRAMEWORK FOR AN ALLOWANCE BANKING PROTOCOL FOR SULFUR DIOXIDE EMISSIONS

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ABSTRACT

Market-based emissions trading approaches such as the allowance trading program for sulfur dioxide impose unique recordkeeping requirements on the agency responsible for the administration of the program. An allowance banking protocol is a means of meeting these requirements. Recordkeeping and tracking of traded allowances is necessary to prevent misuse and double counting of traded allowances, and also to ensure that allowance allocation caps on various bonus reserves and during Phase II of the program are not exceeded at the time of allowance allocation. The conceptual framework for an allowance banking protocol for sulfur dioxide emissions is described herein. The protocol is based on the acid rain provisions of Title IV of the 1990 Clean Air Act Amendments. Key elements of the protocol include: 1) eligibility criteria for allowance allocation; 2) quantification procedures for allowance allocation; 3) certification, recordkeeping and accounting criteria; 4) criteria for compliance determination; 5) criteria for allowance allocation during subsequent years; 6) criteria for allowance banking; 7) eligibility criteria for allowance trading; 8) enforceability criteria for allowance trades; and 9) criteria for allowance adjustments. The proposed allowance banking protocol can be used to integrate allowance allocations, compliance determinations, trading/banking criteria, and enforcement criteria for trades into a single system. This expedites the process of approval of allowance allocations and allowance banking and trading. It also reduces the amount of paperwork involved. The allowance banking protocol is one means for the practical implementation of the rules and provisions of the allowance trading program; and it can make the flexibility offered by the program for achieving compliance and air quality goals a practical reality.

INTRODUCTION

The Title IV provisions of the 1990 Clean Air Act Amendments (CAAA) seek to achieve a two-phase ten million ton reduction, from 1980 levels, in electric utility-generated sulfur dioxide emissions, by calendar year 2001. This is equivalent to a 50 percent reduction in annual sulfur dioxide emissions. They also seek to enforce an annual cap of 8.9 million tons of sulfur dioxide emissions from all utility power plants greater than 25 MW capacity. To achieve these goals, the Title IV provisions establish a market-based allowance trading approach. The main feature of the allowance trading approach is that it permits free market trading of sulfur dioxide allowances. An allowance is defined as an authorization to emit one ton of sulfur dioxide emissions, during, or after, a specified calendar year.

A market-based approach such as an allowance trading program imposes unique recordkeeping requirements. An allowance banking system protocol is one means of fulfilling these requirements. This article highlights the conceptual framework for an allowance banking system protocol. The protocol provides a scheme for the practical implementation of the rules and provisions of the allowance trading program. Topics addressed herein include the need for an allowance banking system protocol, the principal features, and the benefits of such a protocol. Information related to the Title IV provisions of the CAAA and basic to the development of this protocol has been obtained from Stensvaag [1].

NEED FOR AN ALLOWANCE BANKING SYSTEM PROTOCOL

The allowance trading program has numerous complicated and conditional exceptions. Affected units (sources) are divided into categories and subcategories, and allowances are granted to utilities under these various categories. In addition to basic allowances, bonus allowances are also granted to eligible units (or utilities) in various subcategories. To have an orderly implementation of the allowance trading program, a proper administrative process should be established by which an electrical utility can receive its basic and bonus allowance allocations from the U.S. Environmental Protection Agency, or the state or local agency responsible for the administration of the allowance trading program.

Allowance trading provisions require compliance determinations at the end of every calendar year. To achieve compliance every affected unit should have allowances greater than or equal to the quantity of sulfur dioxide emitted by it, in tons, during the calendar year. At the time of compliance determination, allowances equal to the tons of sulfur dioxide emitted by the unit are retired. Allowances in excess of those required for achieving compliance can be banked for future use or traded or sold to other affected units. A proper administrative process needs to be established whereby a utility can bank or trade its excess allowances.

The ease with which affected units can obtain basic and bonus allowance allocations, and bank or trade excess allowances is an important factor which can influence the success of the allowance trading program. A properly developed allowance banking system protocol can achieve these objectives. Such a protocol is also essential for achieving the air quality goals of the allowance trading program.

The allowance trading approach is a free-market based approach. Such an approach could lead to errors in the number of allowances actually involved in the buying or selling process. This necessitates the tracking of allowances as they are traded from one utility to another. An allowance banking system protocol can be used for the purpose of tracking and prevention of misuse of traded allowances.

The allowance trading program has strict penalty provisions for noncompliant units. These provisions include withholding of allowances from the subsequent years' allocation by an amount equal to the excess tonnage of sulfur dioxide emissions from the noncompliant unit. An allowance banking system protocol can be used to integrate criteria for allowance allocations and compliance to ensure that the penalty provisions for noncompliance are enforced.

The allowance trading provisions also grant allowance to eligible utilities from various bonus reserves. A feature of some of these reserves is that the total number of allowances that can be allocated annually are limited. It is important to have accounting procedures for allowance allocations from such reserves so that the cap on annual allowance allocations is not exceeded. An allowance banking system protocol can be used to ensure that the allowance allocation caps on various bonus reserves are not violated.

At some future time, it may be necessary to revise the quantity of annual allowance allocations to affected units. It is important to define the treatment of banked excess allowances in the event that revisions in the quantities of annual allowance allocations, and/or the Phase II emissions cap of 8.9 million tons, becomes necessary. This should generate confidence among participating utilities to the extent that they can be aware of changed banked allowances and/or future allowance allocations. An allowance banking system protocol can be used to address the treatment of banked allowances and subsequent allowance allocations.

FEATURES OF ALLOWANCE BANKING SYSTEM PROTOCOL

An allowance banking system protocol that addresses the above needs should include the following features at a minimum:

1. Eligibility Criteria for Allowance Allocation.
2. Quantification Procedures for Allowance Allocation.
3. Certification, Recordkeeping and Accounting Criteria.
4. Criteria for Compliance Determination.

5. Criteria for Allowance Allocation During Subsequent Years.
6. Criteria for Allowance Banking.
7. Eligibility Criteria for Allowance Trading.
8. Enforceability Criteria for Allowance Trades.
9. Criteria for Allowance Adjustments.

Figure 1 is a schematic of a proposed allowance banking system protocol which includes the above features. The features have been integrated to enable successful implementation of the allowance trading program. Each of these features are now described.

ELIGIBILITY CRITERIA FOR ALLOWANCE ALLOCATION

The purpose of these criteria is to facilitate the subdivision of the affected units into the various categories and subcategories under which they are eligible for allowance allocations. The administrative agency should use an application form to obtain information from affected units. The form should seek information from the affected units such that the processing of the completed application and the subsequent categorization of the affected unit can be computerized. The form should also require supplemental documents for the purpose of verification of the information provided. The administrative agency should standardize the types of documents that each affected unit needs to submit. On the basis of the information received in the application, the affected unit can be classified into the categories and subcategories under which it is eligible for allowance allocations.

QUANTIFICATION PROCEDURES FOR ALLOWANCE ALLOCATION

An important aspect of allowance allocation is the use of numerous statutory formulas and computation procedures for determining the maximum quantities of basic and bonus allowances that can be allocated to affected units. Details are included in Volume 40 of the Code of Federal Regulations. Some of the bonus allowance reserves are capped in terms of the total number of allowances that can be allocated annually. If the sum of the maximum number of bonus allowance allocations from the reserve exceeds the respective cap, then the bonus allowances must be allocated proportionally to all eligible units. Thus, the maximum number of bonus allowances calculated need not represent the actual number of allowances that an affected unit may receive from a particular bonus allowance reserve. This necessitates the use of recordkeeping documents and accounting procedures for allocation of allowances from various reserves. It is important to note that no allowances, basic or bonus, are actually allocated in this feature.

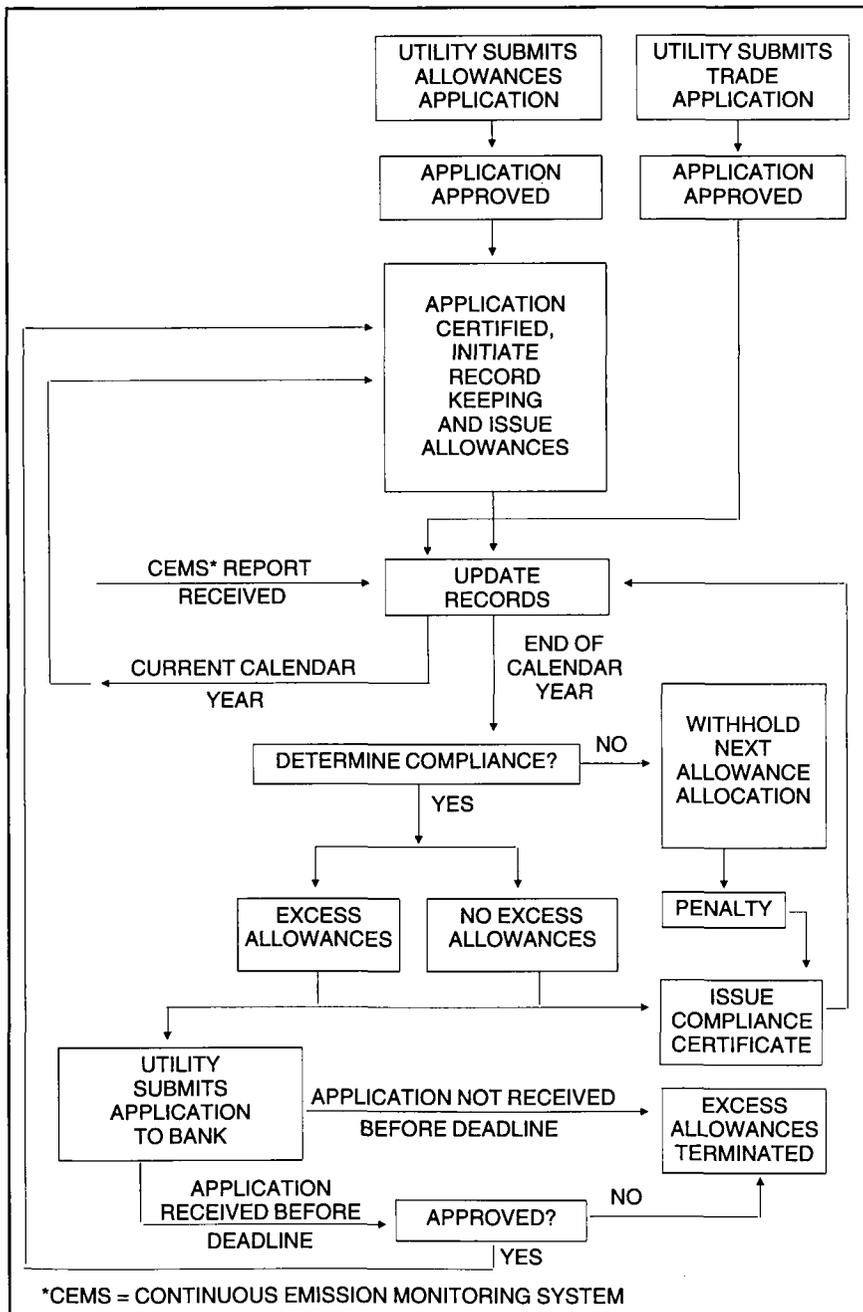


Figure 1. Schematic of proposed allowance banking system protocol.

CERTIFICATION, RECORDKEEPING AND ACCOUNTING CRITERIA

This feature of the allowance banking protocol is where the actual allocation of allowances occurs. The key components of this feature include: 1) recordkeeping and accounting tables for basic and bonus allowance allocations; 2) an allowance certificate; and 3) documents for tracking of traded/banked allowances.

The first component involves the use of recordkeeping tables for the actual number of basic allowances and bonus allowances that can be issued from a bonus allowance reserve. These tables, examples of which are in Tables 1 and 2, ensure that the caps on annual allowance allocations from various bonus reserves are not exceeded [2]. The basic allowance and various bonus allowances tables should include the following provisions: 1) the calendar year for which the record is maintained; 2) the name of the affected unit to which allowances have been allocated; 3) the maximum number of allowances that can be allocated to the affected unit from either the basic allowance or the respective bonus allowance; 4) the actual number of allowances that have been allocated to the affected unit; and 5) the number of the allowance certificate issued to the affected unit which includes the basic and/or bonus allowance allocations from the respective reserve for a particular calendar year. The allowance certificate number can be used to trace basic and/or bonus allowances issued in a particular calendar year at a later time.

The purpose of the allowance certificate issued by the administrative agency is to notify the affected unit of the allowances it has received in various categories and subcategories, and the total allowances for the calendar year. This should facilitate the affected unit in verifying the quantity of allowances that it has been allocated and the categories in which they have been made. An example of an allowance certificate is in Table 3 [2].

Each allowance certificate should have a unique number which could facilitate tracking of allowances over subsequent calendar years. Each certificate should also have a date of issuance and date of expiry. Revision of an allowance certificate will cause the existing certificate to become void. Revisions could be used to reflect allowance trades during a calendar year. Each certificate should have provisions to enter the name of the firm involved in a trade (or purchase), the number of the allowance held by the firm, and the number of allowances involved in the trade. Each time a revised allowance certificate is issued, documentation of the details of the transaction should be included.

Once an allowance certificate expires, the number of the new allowance certificate being issued should be entered on the expired certificate. The number of allowances in excess of those required for compliance should also be recorded on the expired certificate. This facilitates the tracking of excess allowances over subsequent years.

Information pertaining to various recordkeeping documents for tracking of traded emission reduction credits was obtained from a manual published by the

Table 1. Phase I Three State Bonus Allowance Allocations¹ (Shah [2])
 Applicable Calendar Year: _____

Name of Unit	A ²	B ³ = (A) / (ΣA)	C ⁴ = B × 200,000	D ⁵

¹These allowances are allocated annually to units in three specific states for each calendar year from January 1, 1995, to December 31, 1999.

²A = Number of basic Phase I allowances allocated to this unit.

³B = Pro rata share of basic Phase I allowances for this unit.

⁴C = Number of three state bonus allowances allocated to this unit.

⁵D = Allowance Certificate Number.

Table 3. Certificate of Allowance Holdings (Shah [2])

Certificate #: _____ Revision #: _____ Issued On: _____
 Owner: _____ Expires On: _____
 Address: _____
 Phone Number: _____ Permit #: _____

This certificate represents the allocation of
NUMBER OF ALLOWANCES

for sulfur dioxide emissions. These allowances are allocated to

NAME OF OWNER

according to the acid rain provisions of the Clean Air Act Amendments of 1990. Each allowance is an authorization to emit one ton of sulfur dioxide during the period specified by the date of issue and expiry of this certificate. At the end of this period, allowances determined to be in excess by the administrative agency can be banked and subsequently traded if desired, subject to the rules of banking and trading of allowances. Allowances do not constitute a property right and the Administrator of the USEPA has the authority to terminate or limit such authorization as defined by allowances.

 (Signature)
 OFFICIAL REPRESENTATIVE

 (Signature)
 ADMINISTRATIVE AUTHORITY

FOR OFFICIAL USE ONLY

ALLOWANCES USED UP FOR EMISSIONS BY OWNER: _____

ALLOWANCES SOLD/PURCHASED/BANKED/ALLOCATED: _____

BUYERS'/SELLERS' CERTIFICATE #: _____

ALLOWANCES AT DATE OF EXPIRY: _____

(After accounting for emission requirements and trades during the calendar year)

BALANCE OF ALLOWANCES ACCOUNTED IN CERTIFICATE #: _____

Certificate #: _____ Revision #: _____ Issued On: _____
 Owner: _____ Expires On: _____
 Address: _____
 Phone Number: _____ Permit #: _____

Description of Transaction	Date	# of Allowances
# of Allowances Held @ Time of Transaction	_____	_____
Total # of Allowances Remaining After Transaction	_____	_____

Details of Basic and Bonus Allowance Allocations by USEPA

(To be documented at the time of allocation of allowances in each calendar year and not with every revision of allowance certificate)

Category of Allocation	# of Allowances Allocated
(1). _____	_____
(2). _____	_____
(3). _____	_____

Details of Allowances Withheld by USEPA

(To be documented at the time of allocation of allowances in each calendar year and not with every revision of allowance certificate)

Category of Withholding	# of Allowances Withheld
(1). _____	_____
(2). _____	_____
(3). _____	_____

Total # of Basic and Bonus Allowances Allocated: _____

U.S. Environmental Protection Agency [3]. This information has been modified to meet requirements of the allowance trading provisions and this allowance banking protocol. The three documents which comprise the allowance tracking system include: 1) an allowance registry; 2) an allowance tracking directory; and 3) an allowance trading log.

The allowance registry can be used to record the details of each transaction during a calendar year. An example is in Table 4 [2]. The allowance registry should be numerically organized according to allowance certificate numbers. It should identify the date of issuance and expiry of each certificate, and the pertinent owners of the certificates. The transactions to be documented in an allowance registry include deposition of allowances by the U.S. Environmental Protection Agency, allowances purchased from other affected units, balance allowances from the previous year that have been carried forward, allowances withdrawn to demonstrate compliance, and allowances withdrawn for purposes of trading. The allowance registry should also maintain a record of the number of times an allowance certificate is revised, the number of each new allowance certificate issued to the affected units at the end of a calendar year, and the number of allowances remaining at that time for each included unit.

Each page of the allowance tracking directory should identify an account holder in the allowance bank; this should correspond to a single unit. Each page of the directory is analogous to a statement of account from a financial bank. An example of a tracking directory is in Table 5 [2]. The pages in the directory could be sorted or arranged in the alphabetical order of the names of affected units. The allowance tracking directory should have provisions for recording the numbers of the allowance certificates held by the affected units during a calendar year, and the new allowance certificates issued to the units at the end of each calendar year. The certificate numbers can be used to trace the allowance holdings of an affected unit at any point of time during a calendar year.

The allowance trading log should be used to record all allowance trades involving buying/selling which occur in a calendar year. An example of a trading log is in Table 6 [2]. The primary purpose of the allowance trading log is to record the price of allowances used in trades. It is a mechanism of price disclosure of allowances in the allowance trading market. It should help in promoting a competitive market by enabling affected units to make informed decisions regarding allowance trading in relation to choices of levels and methods of abatement.

CRITERIA FOR COMPLIANCE DETERMINATION

The CAAA mandate that every affected unit should install Continuous Emissions Monitoring Systems (CEMS) to determine the quantity of sulfur dioxide actually emitted by it during a calendar year. At the end of every calendar year, each affected unit should submit a copy of its CEMS report to the administrative agency in charge of the allowance bank. The agency should update the records of

Table 5. Allowance Tracking Directory (Shah [2])

Name of Unit: _____ Permit #: _____
 Address: _____ Phone #: _____

Year (i)	Allowance Certificate #	Allowance Holdings in the Current Year				Allowances Withdrawn in the Current Year			Net Balance of Allowances at End of Current Calendar Year $H_i^8 = D_i - G_i$	Number of New Allowance Certificate
		ΣA_i^1	ΣB_i^2	ΣC_i^3	D_i^4	ΣE_i^5	ΣF_i^6	G_i^7		

¹ ΣA_i = Total number of allowances allocated by USEPA to this unit, in the current year, according to the acid rain provisions of CAAA of 1990 (computed from allowance registry).
² ΣB_i = Total number of allowances purchased by this unit, in the current year, from other units as permitted by allowance trading provisions of the CAAA of 1990 (computed from allowance registry).
³ ΣC_i = Total number of balance allowances carried forward, to the current year, from previous year (computed from allowance registry).
⁴ D_i = Total number of allowances deposited in the unit's account in current year = $\Sigma A_i + \Sigma B_i + \Sigma C_i$.
⁵ ΣE_i = Total number of allowances used up in the form of equivalent emissions of sulfur dioxide from unit, in the current year, as determined by Continuous Emissions Monitoring System (CEMS) (computed from allowance registry).
⁶ ΣF_i = Total number of allowances sold to other units, in the current year (computed from allowance registry).
⁷ G_i = Total number of allowances withdrawn from account, in the current year = $\Sigma E_i + \Sigma F_i$.
⁸ H_i = Net balance of allowances in current year = $(D_i - G_i)$.

each affected unit for the calendar year for which compliance is determined. The agency should also determine the number of allowances held by each affected unit at the end of the calendar year for which compliance is being determined, after accounting for all the allowance transactions and emission requirements in that calendar year. If this number is greater than or equal to zero, the unit is in compliance with the acid rain provisions of the CAAA.

CRITERIA FOR ALLOWANCE ALLOCATIONS DURING SUBSEQUENT YEARS

Once compliance is determined the allowance bank should automatically allocate allowances to the affected units for the next calendar year. It should issue a new allowance certificate to each affected unit indicating the number of basic and bonus allowances that it has received, and the number of excess allowances from the previous calendar year that have been carried forward into its account in the current year. The onus of submitting the CEMS report within the scheduled deadline to the administrative agency, which is essential for compliance determination, is with each affected unit. Failure on the part of affected units to do so could result in the withholding of allowance allocations for the subsequent year.

CRITERIA FOR ALLOWANCE BANKING

If at the end of the calendar year it is found that a unit has allowances in excess of those required for achieving compliance, the unit can bank its excess allowances. The administrative agency should notify the unit of the excess allowances it has created over the last calendar year, and that it should submit an application for the banking of these allowances. The banking application should consist of a letter stating the intention of the unit to bank its excess allowances for future use, the source and the method by which it created reductions in its sulfur dioxide emissions causing an excess of allowances, and the number of excess allowances it has created. The application should be submitted prior to a deadline specified by the allowance bank. Failure to do so could result in the termination of all excess allowances. If excess allowances are created by means of reduced utilization, then the affected unit must specify the units to which their power production must be shifted to compensate for such reduced utilization, if such reduced utilization is not the result of energy conservation and production efficiency reports. This requirement ensures that owners or operators of affected units do not circumvent their emission limitations requirements by utilizing an affected unit less and a unit with no tonnage limitation more.

The application should be evaluated in terms of the eligibility of the excess allowances for banking, and then quantified relative to the number of allowances that can be banked. The application should be certified in the sense that these allowances can be carried forward in the next year for use at a later time. These

allowances should be included in the allowance certificate issued for the basic and bonus allowances for the unit for the next calendar year.

ELIGIBILITY CRITERIA FOR ALLOWANCE TRADING

The acid rain provisions of the CAAA permit trading of allowances between affected units. This allowance banking system protocol is so designed that excess allowances cannot be traded unless they are banked. This means that after the determination of compliance for a calendar year, the affected unit cannot sell any excess allowances to another affected unit without first banking them. An affected unit willing to sell or purchase allowances to or from another affected unit should submit an application for the same. A separate application must be submitted for each trade. The following discussion addresses eligibility criteria for allowances trading.

An affected unit willing to sell its excess allowances should submit an application to the allowance bank specifying the number of allowances that it wants to sell, the price of the allowances, and the name of the affected unit to which it wants to sell the allowances. The number of allowances that the affected unit is willing to sell should be such that the number of allowances that shall be left in its account, after the sale, should be sufficient to meet emissions requirements as specified in its operating permit. If the affected unit wishes to sell allowances greater than this number, it would need to have its operating permit modified to meet the emission limitations specified by the quantity of allowances remaining after the trade. The affected unit should also demonstrate satisfactorily the source and method of achieving the extra reductions to comply with the emissions limitations in the modified operating permit.

Under no circumstances should an affected unit sell allowances greater than the annual number of allowances that it receives as basic and bonus allowances. This restraint should be imposed even if the affected unit selling allowances has allowances greater than its annual basic and bonus allowance allocations at the time of the sale. As discussed later under the enforcement criteria for trades, this restriction is necessary to meet requirements of an allowance trade agreement in the event of closure of the selling unit due to a permit violation or noncompliance. This will also restrict speculative trading in the allowance market.

An affected unit desiring to purchase allowances should also have to submit an application to the allowance bank specifying the number of allowances that it wants to purchase, and the name of the affected unit which is willing to sell to it the specified allowances. It would also need to have its permit modified to reflect the total quantity of sulfur dioxide that it would emit as a result of the trade. The affected unit purchasing allowances must demonstrate to its local air quality control agency that the increase in emissions resulting from the purchase of allowances shall not cause violations of other requirements of the CAAA.

Ambient air quality modeling can be used for purposes of such demonstration. Modeling guidelines for demonstration of the ambient equivalence of emission trades are mentioned in the Emission Trading Program Policy Guidelines [4]. These are assumed to be applicable to the allowance trading program. The affected unit should attach a letter to its applications to this effect from the local air quality control agency. This letter should clearly state that ambient equivalence of the trade has been satisfactorily demonstrated, the number of allowances involved in the trade for which ambient equivalence is demonstrated, and the names of the selling and purchasing units.

Once the trading applications are received by the allowance bank they should be verified for completeness and accuracy. The trading applications should be considered incomplete in the event of the absence of an application from either of the trading parties, or if the application submitted by one or both parties is incomplete. Once the trading applications are verified, the administrative agency should confirm the actual number of allowances that can be traded between the two units. The trade applications should then be certified and the various record keeping documents described earlier updated to account for the transaction. Revised or new allowance certificates should be issued to the trading parties to notify them of the status of their allowance holdings after the trade.

ENFORCEABILITY CRITERIA FOR ALLOWANCE TRADES

In the event that a potential seller violates its permit by emitting quantities of sulfur dioxide greater than those specified in the permit, the seller should demonstrate compliance by purchasing the necessary number of allowances from other affected units. In determining the quantity of allowances that it needs to purchase, such units shall first transfer the allowances as mentioned in the trade agreement to the affected unit which has purchased allowances from it. These shall be transferred from the basic and bonus allowances allocated to the permit violating unit. The number of allowances to then be purchased by the unit shall be the difference between the number of allowances required by the unit to achieve compliance and the number of allowances actually held by it after meeting the trade obligations as specified above.

In the event that the violating unit is forced to shutdown because of noncompliance, it is recommended that the U.S. Environmental Protection Agency should fulfill the requirements of the trade agreement for the remainder of the period at no extra cost to the buyer. This can be done by allocating allowances to the buyer from the basic and bonus allowances that the violating unit was eligible to receive had it been operating. The excess of these allowances should be terminated and would contribute to an air quality gain. The trade agreement can be annulled at any time with the mutual consent of the buyer and the seller. However, this shall not preclude either of the units from meeting their emission limitations as

specified in their permits. The above criteria protect the buyer from losses in the event of permit violations on the part of the seller. These are essential to generate confidence among affected units in allowance trading.

CRITERIA FOR ALLOWANCE ADJUSTMENTS

At some future time, it may be necessary to revise the baseline emissions level definition. Under such conditions the following adjustment criteria for banked allowances and new allowance allocations are germane.

In the event of a change in the baseline emissions level definition, all allowance allocations should be as per the new definition, from the calendar year in which the new definition becomes applicable, irrespective of whether such a change lowers the cap on annual sulfur dioxide emissions or not. In the event of a change in baseline emissions without lowering the cap on annual sulfur dioxide emissions, there should be no reduction in the number of allowances held by the affected unit up to the calendar year from which the new definition of baseline emission level applies. Although the U.S. Environmental Protection Agency [5] has previously specified several other options for accounting for banked allowances ranging from completely forfeiting all banked allowances to partial confiscation or discounting, the above approach should generate confidence among affected units in the allowance banking system. Such affected units should not feel insecure while banking allowances. Since every banked allowance is a reduction of one ton of sulfur dioxide emission, it represents an overall short term air quality benefit. However, if a change in the baseline emissions level also reduces or lowers the cap on annual sulfur dioxide emissions, all banked allowances should be reduced or discounted pro rata by a ratio equal to the reduction or lowering of the cap on annual sulfur dioxide emissions.

BENEFITS OF ALLOWANCE BANKING PROTOCOL

Based upon the above conceptual framework, the following benefits can be delineated for this allowance banking protocol:

1. It can ensure that the cap on total or annual allowance allocations from various bonus reserves is enforced.
2. It can play a pivotal role in maintaining the cap of 8.9 million tons of sulfur dioxide emissions during Phase II.
3. Various recordkeeping documents can be integrated with each other by means of an allowance certificate number to enable tracking of allowances.
4. A minimum amount of paper work is involved, and the protocol can be easily structured for a computer database.
5. It includes a mechanism for price disclosure of allowance trades.

6. The simplicity of the suggested application forms enables affected units to more easily qualify for allowance allocations.
7. It integrates recordkeeping and approval for allowance allocations, banking, and trading into one system, thereby simplifying the task of tracking various types of allowance transactions.
8. The completely integrated structure of the protocol makes it easy to identify mistakes and rectify them.
9. Compliance determinations and allowance allocations for subsequent years are integrated, thus ensuring that required penalties for noncompliance are enforced.

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